

1975

1975-1976 Southern Illinois University Bulletin Carbondale Campus (Undergraduate Catalog)

Southern Illinois University Carbondale

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Southern Illinois University Bulletin

1975/1976
Undergraduate
Catalog
Carbondale

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This Issue

of the *Southern Illinois University Bulletin* covers in detail questions concerning the undergraduate program of Southern Illinois University at Carbondale. It supersedes Volume 16, Number 4.

The following issues of the *Southern Illinois University Bulletin* may be obtained from University Graphics, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Graduate Catalog

Schedule of Classes. Please specify session (fall, spring, or summer).

Undergraduate Catalog.

This publication provides information about Southern Illinois University at Carbondale. Primary attention is given to its academic program, rules and regulations, and procedures. A student starting his collegiate training during the period of time covered by this catalog (Summer 1975 through Spring 1976) is subject to the curricular requirements as specified herein. Should these requirements subsequently be changed by the University, the student is assured that necessary adjustments will be made so that no additional time is required of him, because of these changes, in meeting his educational objectives. Where programs include requirements established by agencies external to the University, every effort will be made to follow this same principle so far as possible. Should subsequent curricular requirement changes work to a student's advantage, he may elect to meet the new requirements rather than those contained herein. This curricular requirement arrangement will extend for a seven calendar year period from date of entry for baccalaureate programs and three years for associate programs. If the student has not met his undergraduate educational objectives by that time, he will then become subject to current curricular requirements. Should the University find it necessary to discontinue an academic program, the effective date, unless otherwise dictated, will be such that the last regularly admitted class will be able to complete the program in regular time sequence. This means four years for baccalaureate and two years for associate programs. The University reserves the right to change information contained herein on matters other than curricular requirements without notice when circumstances warrant such action, and apply the change to all students without regard as to their date of entry into college.

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University Calendar

Fall Semester 1975

Semester Period Begins
New Student Days
Semester Classes Begin
Labor Day Holiday
Thanksgiving Holiday

Final Examinations

Semester Ends

Saturday, August 16
Thursday–Friday, August 21–22
8:00 A.M., Monday, August 25
Monday, September 1
Saturday, November 22, 12 noon—
Monday, December 1, 8:00 A.M.
Saturday, December 13, 12 noon—
Saturday, December 20
Saturday, December 20

Spring Semester 1976

Semester Period Begins
New Student Days
Semester Classes Begin
Washington's Birthday Holiday
Spring Vacation

Final Examinations

Commencement

Semester Ends

Friday, January 2
Thursday–Friday, January 15–16
8:00 A.M., Monday, January 19
Monday, February 16
Saturday, 12 noon, March 13—Monday,
8:00 A.M., March 22
Saturday–Friday, May 8–14
Friday, May 14
Friday, May 14

Summer Session 1976

Session Activity and Classes
Begin
Independence Day Holiday
Final Examinations
Commencement
Session Ends

7:30 A.M., Monday, June 14
Monday, July 5
Wednesday–Thursday, August 4–5
Friday, August 6
Friday, August 6

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Southern Illinois University at Carbondale

History

Chartered in 1869 with instruction initiated in 1874, Southern Illinois University at Carbondale has entered its second hundred years in operation. Established in 1869 as Southern Illinois Normal University, the school acquired the name, Southern Illinois University, in 1948 by legislative action. At the outset of the 1970's, Southern Illinois University became a single state system with two universities: Southern Illinois University at Carbondale and Southern Illinois University at Edwardsville. Southern Illinois University at Carbondale also has a medical school campus at Springfield. The institution first operated as a two-year normal school but in 1907 became a four-year, degree-granting institution although continuing its two year course into the 1930's. It was in 1943 that the school was transformed from a teacher-training institution into a university, thus giving official recognition to the area's demand for diversified training and service. Graduate work was instituted in 1943, with the first Ph.D. degrees granted in 1955. There has been diversification of programs at the undergraduate level with the establishment of the Colleges of Communications and Fine Arts, Education, Business and Administration, Human Resources, Liberal Arts, and Science and the Schools of Agriculture, Engineering and Technology, Technical Careers, and programs in University Studies. In addition to expansion of programs within the Graduate School, professional schools have been established in medicine and law.

In keeping with the state's master plan, the University's objective is to provide a comprehensive educational program meeting as many individual student needs as possible. While providing excellent instruction in a broad range of traditional programs, it also helps individual students design special programs when their interests are directed toward more individualized curricula. The University comprises a faculty and the facilities to offer general and professional training ranging from two-year associate degrees to doctoral programs, as well as certificate and non-degree programs meeting the needs of persons not interested in degree education.

Location

The city of Carbondale is approximately 100 miles southeast of Saint Louis, Missouri, in Jackson County, the western border of which is the Mississippi River. Immediately south of Carbondale begins some of the most rugged and picturesque terrain in Illinois. Sixty miles to the south is the historic confluence of the Ohio and Mississippi rivers, the two forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois.

The region immediately surrounding Carbondale is noted for its large peach and apple orchards. Within ten miles of the campus are located two state parks and four lakes and much of the area is a part of the Shawnee National Forest.

Campus

Immediately south of the city of Carbondale, the University campus, comprising more than 3,290 acres, has developed a 981 acre portion with woods and a lake as a site for its academic buildings and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas. Two beautiful features that are located near the center of the campus complex are a wooded tract, preserved in the tradition of the native forests of Southern Illinois, and several buildings surrounding the site which formed the original campus a century ago. Approximately seventy large permanent buildings and several hundred small temporary buildings are located on the campus. Additional buildings now under construction, ready for early start on construction, or recently completed include:

Communications Building	McAndrew Stadium
James W. Neckers Building	Recreation Building
Life Science Building II	Faner Hall
Student Center Addition	School of Technical Careers

In addition to the numerous recreational facilities in the area, the University's own Lake-on-the-Campus offers facilities for swimming, boating, fishing, and picnicking within the confines of the campus. Some of the facilities for the School of Technical Careers remain at a site ten miles east of Carbondale although current plans call for their replacement by permanent instructional facilities on the Carbondale campus. The part of its program related to aircraft technologies is located adjacent to the Southern Illinois Airport. The Touch of Nature Environmental Center, a 5000-acre complex on the shores of picturesque Little Grassy Lake, provides opportunity for outdoor learning experiences.

Accreditation

The University is fully accredited by the North Central Association of Colleges and Secondary Schools. The University and its various academic components carry the following accreditation on the associate, baccalaureate, and higher levels: North Central Association, National Council for Accreditation of Teacher Education, Accrediting Council of the American Assembly of Collegiate Schools of Business, Inc., American Bar Association (provisional accreditation), American Board of Funeral Service Education, American Chemical Society, American Council on Education for Journalism, American Dental Association, American Dietetics Association, American Institute of Architects, American Medical Association and American Association of Medical Colleges (provisional accreditation), American Physical Therapy Association, American Psychological Association, American Speech and Hearing Association by American Board of Examiners in Speech and Hearing, Board of Vocational Education of the State of Illinois, Council on Social Work Education, Engineer's Council for Professional Development (B.S. program in engineering and engineering technology), Federal Aviation Administration, Illinois Department of Registration and Education, National Association of Schools of Music, United States Office of Education, and State Board of Vocational Education for Vocational Home Economics.

1 Administrative Organization

OFFICE OF THE PRESIDENT

WARREN W. BRANDT, *President*

The president of Southern Illinois University at Carbondale is the chief executive officer of that institution. As chief executive officer, he is directly responsible to the Board of Trustees for the academic, administrative, and business affairs of the institution, in order to accomplish its teaching, research, and service goals. He implements and carries out all board policies governing the internal and external affairs of the University as are assigned and delegated to him by the board.

The president has the authority to perform those duties and responsibilities delegated to him by the Board of Trustees which are consistent with the statutes of the State of Illinois and board statutes or policies for his University and is authorized and directed to take all actions necessary to the accomplishment of his duties.

The following officers report directly to the president: vice president for academic affairs and provost, vice president for administration and campus treasurer, vice president for development and services, vice president for student affairs, University legal counsel, and dean and provost, Southern Illinois University School of Medicine.

UNIVERSITY LEGAL COUNSEL

JOHN W. HUFFMAN, *Legal Counsel*

The office of the University Legal Counsel represents the University and its principal officers in litigation, furnishes legal advice and counsel to officers of the University, and prepares or approves all contracts, deeds, and other legal documents executed on behalf of the University. The office also confers with the principal officers of the Edwardsville campus and the Board Staff Legal Counsel on legal problems affecting the University or any of its schools, departments, or divisions.

VICE PRESIDENT FOR ACADEMIC AFFAIRS AND PROVOST

JOHN KEITH LEASURE, *Vice President for Academic Affairs and Provost*

Through delegation by the president, this office establishes priorities and formulates plans for the various academic missions of Southern Illinois University at Carbondale and stimulates and coordinates similar planning within the academic units. Additional responsibilities include the development of academic personnel policies, analysis and review of academic budgets and the preparation of an integrated academic budget for Southern Illinois University at Carbondale, review and monitoring of existing academic programs and the analysis of proposed new programs, coordination of the activities of all academic units, and the performance of additional duties as may be assigned by the president.

School of Agriculture

GILBERT H. KROENING, *Dean*

*Agricultural Industries; Animal Industries; Forestry;
Plant and Soil Science*

In addition to the above departments interested persons should also check agricultural education (major), agriculture (courses), and agriculture, general (major).

The School of Agriculture provides opportunity for the students to prepare themselves professionally through concentrating on study of agricultural and forest production and services and industries closely related thereto. Through teaching of formal courses, conducting research of significance to agriculture and forestry of the area, and providing consultation and service to the people of Southern Illinois in all phases of agriculture, forestry, and related occupations, the School of Agriculture strives to encourage better use of rural resources for the general welfare.

Of the recent graduates of the School of Agriculture, about 35% have been employed in private industry, about 20% have entered farming or farm management and about 15% have been employed in each of: government (federal, state, county, and city); education or extension; graduate study or professional schooling.

In addition to preparing students for employment in the traditional agricultural and agriculturally related occupations, the School of Agriculture is increasing its emphasis in the currently important areas of environmental studies and ecology.

School of Agriculture students come from both rural and urban homes, and a rapidly increasing number of agriculture and forestry students are women. Students who elect any one of the six majors in the School of Agriculture are counseled and advised for registration in the school. Graduates receive the Bachelor of Science degree.

The Agriculture Building houses the offices, classrooms, and laboratories of the school. Other research and teaching facilities include over one-third acre of greenhouses plus 2000 acres of farm and timber land.

College of Business and Administration

CHARLES HINDERSMAN, *Dean*

Accountancy; Administrative Sciences; Finance; Marketing

The College of Business and Administration aims to prepare students to perform successfully in business and other organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration. Students find that the professional education they receive in the college is desired by business, governmental units, and other public institutions. The advanced curriculum and related programs provide students not only with a meaningful education but with a means of relating that education to organizations and commerce.

The College of Business and Administration offices are located in the General Classroom Building, and the classes are conducted in various buildings throughout the campus.

College of Communications and Fine Arts

C. B. HUNT, JR., *Dean*

School of Art

School of Journalism

School of Music

Cinema & Photography; Radio-Television; Speech; Speech Pathology & Audiology; Theater

The College of Communications and Fine Arts was formed in 1970 from the School of Communications and the School of Fine Arts. The schools and departments of this conglomerate provide students opportunity to study the mass communication media and the fine arts and to develop creative and professional skill in these fields.

Faculty of the college are engaged in research into mass communications and provide consulting and other services to area schools, newspapers, and radio and television stations. A number of special events are presented each year, including lectures by noted artists, musical ensembles, dance recitals, dramatic presentations, and art exhibitions.

University Galleries, a campus-wide activity for the showing of student and faculty work as well as traveling exhibitions is under the jurisdiction of the college.

The Broadcasting Service operates WSIU (FM), a public radio station, WSIU-TV, Channel 8, a public television station, both in Carbondale, and a second public television station, WUSI-TV, Channel 16, at Olney. Broadcasting Service also operates a Radio Tape Network, distributing programs to radio stations.

Administrative offices of the college are located in the Communications Building, which includes the newest theater on campus along with broadcasting facilities, film production services, and the office of the *Daily Egyptian*.

College of Education

ELMER J. CLARK, *Dean*

Business Education; Educational Administration & Foundations; Elementary Education; Guidance & Educational Psychology; Health Education; Higher Education; Home Economics Education; Instructional Materials; Occupational Education; Physical Education for Men; Physical Education for Women; Professional Education Experiences; Recreation; Secondary Education; Special Education

Preparation of teacher at all levels and in all areas of instruction in the public schools from preschool education through high school is the special function of the College of Education. In its graduate offerings the efforts of the College of Education include professional work for prospective college teachers and administrators and several specializations in elementary and secondary school administration and supervision.

For most undergraduate students preparing to teach in high schools, the subject-matter courses will be taken in the other colleges and schools of the University, and the professional preparation for teaching, including student teaching, will be taken in the College of Education. Graduates of the College of Education receive the Bachelor of Science or the Bachelor of Music Education degree.

The College of Education, housed in the Wham Education Building, is the oldest unit of the University, which was originally chartered as Southern Illinois Normal University.

School of Engineering and Technology

THOMAS B. JEFFERSON, *Dean*

Electrical Sciences and Systems Engineering; Engineering Mechanics and Materials; Technology; Thermal and Environmental Engineering

The School of Engineering and Technology provides instruction over a broad spectrum of engineering and technology. Through instruction, research, and consultative services, it serves Southern Illinois, the state, and the nation.

Baccalaureate and master's degrees in engineering are offered through the cooperative efforts of the three engineering departments. The Department of Technology has responsibility for baccalaureate degree programs of study in engineering technology and industrial technology.

Administrative offices of the school are located in the Technology Building near Lake-on-the-Campus.

College of Human Resources

STANLEY H. SMITH, *Dean*

Black American Studies; Center for the Study of Crime, Delinquency, and Corrections; Child and Family; Clothing and Textiles; Community Development; Design; Family Economics and Management; Food and Nutrition; Interior Design; Rehabilitation Institute; Social Welfare

The College of Human Resources is involved in people-oriented career education for today's people-concerned generation. The establishment of the college,

which joined units possessing a common goal, provides a focus for various programs designed to train professionals to work with contemporary social problems. These units chose to act in consort because of compatible interests which revolve around the common goal of improving the quality of human life at the individual, family, and community levels. The College of Human Resources represents an effort to apply general systems concepts in higher education by encouraging cooperation and coordination among a variety of related professional and academic faculties. The belief that community action and development of individual potential will be facilitated by interdisciplinary approaches to teaching, service, and research is held by each unit within the college.

Baccalaureate degrees may be earned in administration of justice, child and family, clothing and textiles, design, family economics and management, food and nutrition, interior design, and social welfare. Although black American studies does not offer a degree program at the present time, a core of black American studies courses can be coordinated with course work in other departments on campus to develop a person who can serve the black community, and hence American society, more effectively. As an enhancement to the baccalaureate majors, a minor in community development is offered to provide trained practitioners at the community level in many fields.

School of Law

HIRAM H. LESAR, *Dean*

In response to the need for an additional legal education resource within the state, the Illinois Board of Higher Education's Master Plan Phase III, issued in May, 1971, recommended establishment of a law school with an enrollment of approximately 300 students at Carbondale. An appropriation for this purpose was passed by the Illinois legislature in June, 1972. The University promptly employed a dean, and the school admitted its first class in the fall of 1973.

The school offers a three-year program leading to the Juris Doctor (J.D.) degree. The school has received provisional accreditation from the Section on Legal Education of the American Bar Association during its first year of operation, so that all students enrolled will be eligible to take state bar examinations required for admission to the bar.

Two buildings have been remodeled to provide classroom, library, and office space for the School of Law pending completion of a permanent building. Other available facilities include an adequate law library collection and a broadly-based University with extensive law-related graduate divisions and other academic units. Because of space limitations, the entering class in 1975 will be limited to approximately 80 students.

The faculty and student body of the school are of the highest quality, and its curriculum is designed to inculcate fundamental legal concepts and skills which every lawyer must have and which are the hallmarks of the profession of the law. In addition to the Socratic—casebook method, other teaching methods, including clinical, are utilized as the subject matter requires. The School of Law catalog can be obtained by writing to University Graphics.

College of Liberal Arts

LON R. SHELBY, *Dean*

Anthropology; Computer Science; Economics; English; Foreign Languages and Literatures; Geography; History; Linguistics; Mathematics; Philosophy; Political Science; Psychology; Religious Studies; Sociology

The College of Liberal Arts provides (1) instruction in basic subject matter courses of General Studies; (2) opportunity for majors in a variety of subject areas; (3) electives not available in other instructional units of the University; (4) courses offered through the Division of Continuing Education; (5) graduate-level instruction for students pursuing higher degrees than the baccalaureate; (6) preprofessional training needed for admission to specialized schools such as law and theology.

The diversified offerings of the College of Liberal Arts are designed to help the students develop the ability to seek and weigh evidence and to think critically and independently; a fundamental understanding of the ever-changing social, political, and physical environment; and a deeper understanding of mankind, of cultures past and present, and of man's artistic and literary creations. Although a number of post-college options are open to liberal arts graduates, students in the college may prepare directly for teaching at the secondary level by including in their studies certain professional courses offered by the College of Education. The Bachelor of Arts or Bachelor of Science degree is granted to students who fulfill requirements for graduation from the College of Liberal Arts. The courses of study outlined by the departments determines the degree awarded.

School of Medicine

RICHARD H. MOY, *Dean and Provost*

Southern Illinois University School of Medicine was established in 1970 in response to a need in Illinois for increased opportunities for education in the health fields and the more encompassing need for improvements in the health care delivery system. To have the broadest impact possible on health care in central and southern Illinois, the school is deeply engaged in training men and women who will become physicians; it emphasizes continuing education; and it is a center of health care planning and expertise.

The first class of forty-eight students was admitted for instruction beginning at Carbondale in July, 1973. Preference will be given to applicants from central and southern Illinois who intend to practice medicine in the state. Inquiries on admissions should be addressed to Committee on admissions, Southern Illinois University School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.

The curriculum runs twelve months a year for three years. The first year program, conducted on the campus of Southern Illinois University at Carbondale, has primarily a laboratory or pre-clinical orientation, but with significant clinical input from the beginning. The second year, at Springfield, is about equally divided between laboratory and clinic; and the third year, also at Springfield, is almost exclusively clinical.

Available facilities include the extensive and well-equipped laboratories of Southern Illinois University at Carbondale; the public and private clinical facilities of Carbondale; and St. John's Hospital and Memorial Hospital in Springfield, each of about 700 beds. A new medical school building in Springfield was completed in 1974 in time for the first class transferring from Carbondale.

College of Science

JOHN C. GUYON, *Dean*

Botany; Chemistry and Biochemistry; Geology; Microbiology; Physics and Astronomy; Physiology; Zoology

The College of Science was established January 1, 1973, to provide basic training in the life sciences and physical sciences. Included in the curriculum of each department are survey courses that provide an introduction to the subject matter of that discipline while fulfilling the General Studies requirements of Southern Illinois University at Carbondale. These courses assist all students to develop an understanding and appreciation of the impact of science on one's daily life. Elementary and advanced courses are provided to prepare students for professional employment or entrance into professional and graduate schools. Graduate training is also provided by each of the science departments leading to the M.S. or Ph.D. degree. The research interests of the faculty are extremely diverse.

Students in the College of Science may prepare for teaching at the secondary level by fulfilling the additional requirements of the College of Education. The Bachelor of Arts or the Bachelor of Science degree is granted to students who fulfill the requirements for graduation as given in Chapter 2 and the requirements of the departments in which the students declare their majors.

School of Technical Careers

ARDEN L. PRATT, *Dean*

The School of Technical Careers was created on July 1, 1973, to provide a full range of options and opportunities for occupationally-oriented students at the college level.

The School of Technical Careers combines associate degree programs formerly offered by the Vocational-Technical Institute with post-associate specialities and a new Bachelor of Science degree program in technical careers.

The educational objectives of the school include:

1. Associate degree programs structured for entry of new students or free flow of students from other institutions or from within other units of the University;
2. Post- or extra-associate specializations in occupational areas related to these programs; and
3. Baccalaureate programs for the student whose career goals are not met by existing or traditional college programs.

Associate degree programs are offered in four general areas: allied health and public services, applied technologies, aviation technologies, and graphic communications.

Baccalaureate programs are designed individually by each student and his advisers to fill the needs of his own particular career goals. All resources of the University are available to the student in designing his program, and maximum allowance is made for competencies gained through extra-institutional experiences.

Facilities of the School of Technical Careers are located on the Vocational-Technical Institute campus near Carterville, on the Carbondale campus, and at the Southern Illinois Airport. Information on associate and post-associate programs is available from the office of Information Services, 908 South Wall

Street in Carbondale. Information on baccalaureate programs may be obtained through the office of the dean at 908 South Wall Street in Carbondale.

University Programs

KENNETH W. SERFASS, *Dean*

The University programs area is a new administrative unit consisting of 1) Developmental Skills Program, 2) Division of Continuing Education, 3) General Studies Division, 4) Office of International Education, 5) President's Scholar Program, 6) special majors, and 7) University Museum. These programs are entitled University Programs since they each have the opportunity of being involved in university-wide activities. Therefore, the flexibility of programs and possibility of innovative activities are maximized.

Developmental Skills Program

JESSIE M. HAILEY, *Director*

The University has established an experimental program through which approximately 150 educationally disadvantaged students are admitted to the University each fall. These students would otherwise not meet the regular admission standards. They do, however, show potential for success on the college level. In addition to submitting the regular academic credentials, the students must also submit letters of recommendation. Students who enter this program are admitted in good standing, and are given continuous individual assistance. A tutorial facility is made available to them not only during their initial year, but throughout their college careers.

Division of Continuing Education

RICHARD W. BRADLEY, *Director*

The Division of Continuing Education is the all-University agency designed to extend educational experiences beyond the formal offerings of courses on the Southern Illinois University at Carbondale campus. Means for accomplishing this are unlimited. Consequently, creative approaches for new ways to facilitate continuing education are encouraged and the division's organization is flexible to accommodate new ideas. However, the main programmatic functions are conducted through (1) off-campus credit class programs, (2) adult education non-credit class programs, and (3) educational conference programs.

Classes which offer college credit and are identical to similar classes offered on the campus are scheduled in the various communities of the geographical area served by Southern Illinois University at Carbondale. Classes are also scheduled in locations outside of the state and nation where there are definite advantages to having them offered there.

The adult education program consists of non-credit courses in various vocational, technical, and general education fields designed to provide a wide variety of educational opportunities for adults. Adult education courses are taught by regular staff members obtained from the various departments of the University, as well as carefully selected specialists from the ranks of business, industry, and the professions.

The educational conference program is conducted on the campus of the University or in various off-campus cities and towns if this will make the conference more accessible to those persons most interested. Conferences are given not only for local groups of persons but increasingly for state and national organizational groups. The conference medium allows the many

highly-trained specialists on the faculty, as well as state, national, and international authorities to bring the latest research knowledge in their fields to the people of southern Illinois for immediate practical application.

The major new area of operation for the division will be in the offering of professional training through residency centers for graduate and undergraduate programs in cooperation with junior colleges and military bases.

General Studies Division

ANDREW T. VAUGHAN, *Director*

Man's Physical Environment and Biological Inheritance; Man's Social Inheritance and Social Responsibilities; Man's Insights and Appreciations; Organization and Communication of Ideas; Human Health and Well-Being

The General Studies curriculum at Southern Illinois University at Carbondale is one of unique quality, and accommodates many different levels of preparation for college. This philosophy permits the greatest possible number of persons an opportunity to reach their fullest potential while concurrently directing their efforts toward a stronger and happier democratic society.

A General Studies committee, composed of faculty and student representatives, is responsible for establishing broad policies that determine the program. The director of the General Studies Division is responsible for the implementation of these policies. The individual courses are taught by the academic unit for which the courses were approved.

Added to its coordination and implementation functions, the General Studies Division is responsible for academic advisement and administrative accommodation for certain students.

Students who are uncertain of career objectives may take advantage of an extra period of time to make this important decision by remaining in the General Studies Division. When students are certain about a career they may then transfer to their chosen units. This transfer must ordinarily be made by the time a student has achieved 60 semester hours of credit. Any student in another unit who has fewer than 60 semester hours passed and has come to the realization that his original choice is doubtful, is welcome to petition into the General Studies Division to have time to give further thought to the selection of a career.

A University Studies degree option exists for those students who wish to take a broader approach to their education by not specializing. The bachelor's degree in University Studies is within the jurisdiction of the vice president for academic affairs. The actual conduct of the program is the specific responsibility of the director of the General Studies Division.

Offices of the director and the academic advisers for students in General Studies are located on the ground floor of the south wing of Woody Hall.

Office of International Education

JOSEPH CHU, *Director*

The Office of International Education is responsible for promoting the international programs of the University. It encourages the international endeavors of individual students and faculty members, and it facilitates and supports the international projects of the departments, schools, and colleges. Its major areas of activity include international educational exchange, international research and service projects and programs, inter-institutional cooperation on international programs, and intercultural understanding.

INTERNATIONAL STUDENT AND FACULTY AFFAIRS

The international student and faculty affairs unit of international education assists foreign scholars at the University through its legal and contractual functions and through its supportive and educative programs. It advises and assists with immigration, passport, and other legal matters; it maintains relationships with sponsors, foundations, and government agencies; and it coordinates the University and community programs for personal assistance to foreign scholars. The campus adviser for the senior Fulbright-Hays program, the foreign student adviser, and the community liaison committee operate through this unit.

CENTER FOR VIETNAMESE STUDIES

The Center for Vietnamese Studies is designed to provide an intellectual climate and a physical location in which scholarly knowledge about Vietnam in particular, and Indochina in general, can be developed. The center's foci are the stimulation, encouragement, and support of scholarly research about Vietnam and its environs, the bringing together of faculty and students interested in the area, the development of appropriate academic courses, and the acquisition of library and other research and teaching materials. The center was authorized as an integral academic unit of the University in spring 1969. It is funded by the University itself, and other grants from the Department of Health, Education, and Welfare, and a (211-d) institutional development grant from the Agency for International Development.

President's Scholar Program

JOHN E. DOTSON, *Director*

The President's Scholar Program is designed to enable academically talented students to profit from an association with each other; to achieve maximum flexibility within the framework of the general University curriculum; and to take fullest advantage of the talents and resources in the University. The President's Degree Program, an option available to students interested in pursuing interdisciplinary studies, is also important for maximizing curricular flexibility (see Program Flexibility, Chapter 2.)

The staff assists the scholars individually and in groups to obtain the best curricular and extra-curricular conditions for excellent and rewarding academic work. The program has no set format or curriculum; it is intended to provide opportunities for the individually styled education particularly appropriate to superior students.

Test scores and high school standing provide the basis for inviting entering freshmen to participate in the program. Invitations to other students result from high academic performance at Southern Illinois University at Carbondale. Participants retain the prerogatives of President's Scholars throughout their undergraduate years as long as they meet minimum standards of academic performance and fulfill other limited conditions. Participation in the President's Scholar Program is inscribed in the student's official record.

Inquiries about the program should be addressed to the director, President's Scholar Program.

Special Major

Individual students with academic needs not met in any of the existing majors within the University may arrange a program of courses more suited to their special requirements. See the description of the special major in Chapter 4.

University Museum

BASIL C. HEDRICK, *Director*

The University Museum is a multidisciplinary and interdisciplinary academic and service unit with official recognition at both the graduate and undergraduate levels, serving campus, community, state, national, and international interests. The museum functions as a comprehensive entity within the University framework carrying out its own academic, research, and service programs while simultaneously existing symbiotically with the orthodox disciplines, or joining them in cooperative effort when and where indicated.

The main museum exhibit facilities as well as offices are located in Faner Hall. Mini-exhibits are located in satellite areas about campus and in the Mobile Exhibit Hall.

It is both the policy and responsibility of the University Museum to educate through the acquisition, preservation, study, research, exhibition, and circulation of objects and artifacts of many and diverse genres.

Allied Academic Agencies

Office of Admissions and Records

B. K. BROWNING, *Director*

The Office of Admissions and Records might be called the University's academic accounting office. Its responsibilities span the admitting of undergraduate and international students, the registering of all students, and the maintenance of their official academic records. The office has the following functional areas: central office, admissions office, registration division, records division, microfilm division, and scheduling division.

Representative functions performed by the office are (1) central office: internal management; (2) admissions office: admission of undergraduate and international students, coordination of student recruitment activities and preparation of general University publications used in student recruitment; (3) registration division: registration of students including the assessment of tuition and fees, verification of enrollment status for external agencies, determination of student residency status for purposes of tuition and fee assessment; (4) records division: maintenance of the official student academic records, evaluation of transfer credit presented for acceptance, verification and certification of academic status for various purposes such as intercollegiate athletics and honor societies, graduation clearance, and undergraduate catalog preparation; (5) microfilm division: maintenance of student academic files on microfilm and issuance of transcripts; (6) scheduling division: preparation of the semester schedule of classes and final examination schedule, maintenance of the official listing of University approved courses, and preparation of allied material of the undergraduate catalog.

Aerospace Studies—Air Force ROTC

COL. J. R. FENN, *Adjunct Professor Aerospace Studies*

Aerospace Studies offers a two-year and a four-year program leading to a commission in the United States Air Force. Both programs are open to women. The four-year program is divided into the General Military Course (GMC), covering the freshman and sophomore years, and the Professional Officer Course (POC), covering the last two years. Students qualify to enter the

two-year program at the POC level by attending a six-week field training course during the preceding summer.

The GMC prepares the student for the POC and provides him with an education for space age citizenship of long range value whether he remains a civilian or becomes an officer in the U.S. Air Force. The courses of the POC are designed to provide the basic knowledge, understandings, and experiences which are required to become an effective junior officer in the modern air force. The student learns about the wide range of USAF career specialties open and has an opportunity to request duty in those fields where he is qualified. Those qualified as pilots, who do not already fly, receive 25 hours of flying training plus ground school instruction during their final year before graduation.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for full scholarships for their remaining years at the University. In addition to full tuition and fees, the scholarship provides a monthly tax-free subsistence allowance.

In addition to the courses offered for academic credit, Aerospace Studies sponsors related extracurricular activities. The Aerospace Club is open to all members of the student body. The Arnold Air Society, a national honorary service organization, is open to selected AFROTC cadets. Membership in the Angel Flight, an auxiliary of the Arnold Air Society, is open to selected undergraduate women. Angel Flight assists with community and campus service-oriented projects. The wives of married cadets are eligible for the Cadet Ladies Club which prepares wives and fiancées for participation in military family life.

Further information may be obtained from Aerospace Studies, 807 South University Avenue.

Center for English as a Second Language

The Center for English as a Second Language (CESL) is a part of the Department of Linguistics and is staffed by especially trained members of the University faculty and is designed to teach English intensively to students from other countries who intend to study in American colleges and universities. The program is open, however, to any mature person who wishes to learn English. For additional information write: Administrative Director, CESL, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Clinical Center

ALDEN M. HALL, *Manager*

The Clinical Center is staffed by professional and supervised student diagnosticians, therapists, and counselors. It offers diagnostic and treatment services to faculty, staff, University students, and other individuals in the community. Cooperating in this clinic are the Departments of Elementary Education, Guidance and Educational Psychology, Psychology, Secondary Education, Social Welfare, Special Education, Speech Pathology and Audiology, Physical Therapy, the Counseling Center, the Career Planning and Placement Center, and the Health Service.

Services include diagnostic assessment of psychological, speech, hearing, reading, and general education problems, and therapy services such as various forms of counseling and behavior modification, social casework, speech and audiological therapies, physical therapy, and educational remediation.

Consultant services are also available to professional persons and organizations.

The Library

RALPH E. MCCOY, *Dean*

Morris Library contains approximately 1,600,000 items, 10,800 current periodicals, and collections of textbooks, newspapers, maps, films, framed art works, and phonograph records. With the exception of those in the rare book room, all books are arranged on open shelves and accessible for browsing.

Recognizing the importance of libraries in a college education, the University has given special attention to both quantity and quality of library development. More than 100,000 volumes were added to the collections during the past year. Reference librarians are available throughout the library to assist in locating and using materials. A handbook on library use can be had for the asking. Those wishing further instruction may enroll in a course on library research methods.

Morris Library houses four subject libraries (education, humanities, science, and social studies), a reserve books facility, the Learning Resources Service, and an undergraduate library. Microtext reading equipment is available in each subject library; hi-fidelity phonograph listening equipment is provided in the humanities library. A central card catalog of the entire collection is located on the first floor; books are checked out from a central circulation desk, using an automated charging system. Inexpensive coin operated photocopying equipment is available to students on every floor.

An undergraduate library was opened for service the fall of 1971. Located on the first floor, the new facility has a collection of over 70,000 volumes that are considered basic to the undergraduate curriculum. There is a professional staff to give special attention to the needs of the undergraduate and spare him some of the frustrations of finding what he wants in a universe of books as large and complex as a research library, although he is welcome to use it when his wants cannot be satisfied by the smaller collection.

Within the library system, the Learning Resources Service makes films available to the instructional faculty for individuals and small groups of students. The service supports the full range of instructional activity with the design, production, and use of audiovisual media.

One facility of the Learning Resources Service is the Self Instruction Center. This center provides slides, audio and video tapes, cassettes, and combinations of these for scheduled classes and enrichment studies.

Another facility is the Student Media Design Laboratory, open to students who need to produce instructional media for classes, projects, and the student teaching experience. Materials are made available at cost and professional assistance is provided for both design and production of the media.

Special Meetings and Speakers

R. P. HIBBS, *Coordinator of Special Programs*

The Office of Special Meetings and Speakers brings to the campus professional speakers, performers, and groups to enrich the cultural milieu of the University and Southern Illinois.

The Convocation Series is a series of free, professionally produced programs which any students, staff, faculty, or community member may attend. It covers a wide range of entertainment, from ethnic, popular, and classical music and dance to well-known personalities, performers, and speakers on current, important, and popular subjects.

The Celebrity Series offers opportunities to attend professional Broadway plays, musical theater, ballet, symphony orchestras, and opera. Approximately ten such shows are booked each year at prices much lower than are charged for the same productions in metropolitan areas.

VICE PRESIDENT FOR ADMINISTRATION AND CAMPUS TREASURER

GEORGE MACE, *Vice President for Administration and Campus Treasurer*

Within designated parameters set by the president, this office and offices reporting to it are responsible for administering and supervising all the business and fiscal functions of Southern Illinois University at Carbondale.

These functions include serving as official custodian of all assets, establishing and administering personnel policies, developing and maintaining an appropriate accounting and fiscal control system to record financial transactions, and preparing and approving the necessary reports and analyses to ensure that the University operates within its budgetary limitations.

Within limits prescribed by state law and the by-laws and statutes of the Board of Trustees, this office formulates and administers Southern Illinois University at Carbondale's budgetary process of preparing and substantiating requests for funds and of overseeing their disbursement.

Additionally, this office supervises the day-to-day activities of all departments engaged in any type of business affair, whether it be a revenue producing, service, or disbursing facility.

Airport Operations

C. GENE SEIBERT, *Director*

Airport Operations (Air Institute and Service) has responsibilities in both the academic and service areas.

The flight training unit in the School of Technical Careers offers instruction which provides credit, which may be used as electives in several degree programs.

The air transportation unit provides aircraft charter for administration, academic and student groups, and the general public. An additional responsibility is to provide general airport services and management for Southern Illinois Airport. All flight and ground courses and services are provided at the airport, which is located between Carbondale and Murphysboro on Airport Road.

Auxiliary and Service Enterprises

CARLTON F. RASCHE, *Director*

Auxiliary and Service Enterprises is charged with the responsibility of providing University departments, students, faculty, and staff with various services that might be purchased from commercial sources, but, for reasons of convenience, cost, or control, are more effectively provided by this unit.

The administrative office of Auxiliary and Service Enterprises provides financial supervision and business management for the following entities: Campus Machine Service, Campus Mail Service—Transfer/Transit Service,

Copy/Duplicating Service, inter-campus bus, Laundry Service, military property custodian, Printing Service, Telephone Service, and Vending Service.

Bursar

THOMAS J. WATSON, *Bursar*

The bursar's responsibility includes receiving, safeguarding, and depositing all funds due Southern Illinois University at Carbondale.

Payments for registration, housing, charges resulting from unpaid accounts with other departments, and note payments are collected in the Bursar's Office.

Services are provided for cashing checks; travelers checks are sold; also student checks for work, federal loans, guaranteed loans, scholarships and grants are distributed from the office. Short term loans granted by student financial assistance, as well as refunds authorized by the Office of Admissions and Records, are convertible to cash at the Bursar's Office.

Disbursements

EARL TALLY, *Director*

The Disbursements office is responsible for processing all expenditure vouchers for travel of staff members, for purchase orders, purchase memorandums, inter-fund transfers, agency, purchase authorizations, work orders, and contracts. The office is responsible for affixing signatures on all checks drawn on local depositories, for the distribution of those checks, the distribution of all payroll invoice vouchers, for the preparation of invoice vouchers for all annual purchase orders, and for payment of freight bills. The Disbursements office staff also prepares reports of any duplicate payments and distributes copies of invoice vouchers for local accounts.

General Accounting

CHARLES BERNARDONI, *Director*

The general accounting office is responsible for recording all financial documents of Southern Illinois University at Carbondale to the accounting records of the University; maintaining control records of total state appropriations to Southern Illinois University at Carbondale; assembling, analyzing, and reporting financial information for both external and internal use, as well as administering the financial aspects of externally sponsored research and instructional grants.

The organizational structure has the following sections: 1) accounting control, 2) property control, 3) research and projects—fiscal management, and 4) statistical control.

Methods and Procedures

HUGH BLANEY, *Director*

Methods and Procedures has three general functions: records management, systems design and analysis, and data coordination and preparation for personal services.

Retention and destruction of the University's fiscal records is administered by the director of methods and procedures. A microfilm lab and record storage center for the administrative records of the University is administered by this office.

Systems design and analysis for functions reporting to the vice president for administration and campus treasurer is performed by Methods and Procedures. Scheduling, keypunching, and distribution of all personal services reporting for the University is performed by this office.

Payroll

JAMES D. HAMILTON, *Director*

The primary function of the Payroll office is to assemble data and prepare payrolls for all Southern Illinois University at Carbondale faculty, civil service, and student employees in the proper amounts at the scheduled time and to provide internal and external reports in support of these payrolls. It is responsible for providing information for proper distribution of checks to all employees.

Sabbatical leave notes are prepared and executed in this office. It is also the Payroll office's responsibility to provide information relating to individual pay matters and to release certain payroll data to authorized offices.

Personnel Services

DONALD W. WARD, *Manager*

Civil Service Personnel Services; Personnel Benefits; Personnel Information; Personnel Safety; Personnel Training and Development

The role of Personnel Services is carried out through the coordination, review, and control of all functions that affect human relations, selection of personnel, and working terms and conditions of those persons employed under the University Civil Service System of the State of Illinois. These responsibilities are met by providing leadership in personnel policy formulation, establishment of standards, training for staff development, and the design of methods to bring management and employees together for joint action.

The University employs approximately 2,000 persons under the Civil Service System to support student relations and instructional and research programs. Personnel Services is the central function through which all such employees can express concerns regarding their employment status.

Physical Plant

A. W. BLASS, *Director*

The physical plant functions as a maintenance and service organization, with the responsibility of maintaining and operating all physical facilities utilized in support of the University. This includes the maintenance, repair, and operation of buildings, utilities, distribution systems, equipment, grounds, streets, and sidewalks and the operation of the power plant. The maintenance of buildings includes providing custodial services as well as security of academic facilities.

A secondary, but highly important, responsibility is the rendering of services to various University departments where physical plant manpower, equipment,

and other related facilities can help further their academic endeavor. This includes repairing and maintaining departmental equipment such as chairs, desks, and window air conditioners, and constructing free standing units such as bookcases, tables, and display boards.

Purchasing

GEORGE A. TOBERMAN, *Director of Purchases*

Purchasing; General Stores; Central Receiving; Surplus Property

The Purchasing office is responsible for the procurement of all supplies, services and equipment for the University. Within the limits prescribed by the Illinois Purchasing Act and the by-laws and statutes of the Board of Trustees, it is the responsibility of the Purchasing office to provide a continuing and timely flow of the goods and services needed to achieve the goals and objectives of the University.

General Stores Service is the warehousing function created to permit a planned anticipation of need for items used repetitively to the end that University departments are assured instant response to need at minimum cost.

Central Receiving is the focal point of all inbound and outbound merchandise. This department has the responsibility for determining that all items received are in accord with the quantities and specifications expressed in the purchase order.

Surplus Property Service is the department established to assure that all items made available to the University through state and national surplus property programs are obtained when such items satisfy a definite need. This department is also responsible for the disposal of any surplus or obsolete equipment through sale or condemnation prescribed by the State Property Control Act.

Student Center, SIU Arena, Shryock Auditorium

CLARENCE G. DOUGHERTY, *Director*

The Student Center is the community center of the University, and as such, is a building, an organization, and a program. Together they represent a well-considered plan for the community life of the University.

The Student Center provides services, conveniences, and amenities to the members of the University in their daily life on campus and for getting to know and understand one another through informal association outside the classroom. It provides facilities for dances, movies, banquets, receptions, gallery exhibits, recreation, and meetings. Located in the building are eating facilities including a restaurant, cafeteria, snack bar, vending machines, and private meeting and dining rooms; a bookstore, 16 bowling lanes, a billiard area, auditorium, ballrooms, a self service postal station, information service, ticket sales office, activities area, lounges for study, TV viewing, and general use; locker storage, and offices for student activities and the Student Center staff.

The SIU Arena is designed to accommodate athletic events, meetings, musical programs, stage performances, and similar activities that demand a large indoor participant area or facilities to accommodate large audiences. The facilities and staff are available to help meet the requirements of the educational program, the needs of the intercollegiate athletics program, and the needs of the intramural and recreation program, as well as those of Area

Services, the Division of Continuing Education and Student Activities. The SIU Arena also provides a popular entertainment series to help fulfill the educational, cultural, social, and entertainment needs of the University community.

Shryock Auditorium, located amid "old campus" of Southern Illinois University at Carbondale, stands as one of the fine and performing arts centers of Southern Illinois. The auditorium is equipped to handle almost any type of event, from the performing arts on a grand scale such as opera and ballet, to large group meetings and conferences. The auditorium, seating over 1,200 guests, includes a dressing room complex capable of accommodating up to 70 performers, lighting and sound reinforcement systems incorporating some of the most advanced designs, and an enlarged stage area. Air conditioned throughout the guest areas, the facilities provide the utmost in audience comfort.

Touch of Nature Environmental Center

JACK W. LEGGETT, *Director*

A 6,500 acre complex, Touch of Nature Environmental Center, provides the opportunity for outdoor learning experiences through programs designed for all age groups. These include underway, a challenge camping experience; the handicapped program, for children and adults; the trailriding program; and the environmental workshops, for high school students.

Facilities are available for use by school, and other groups for educational programs and conferences.

The Touch of Nature Environmental Center is ten miles southeast of Carbondale on Little Grass Lake, adjacent to Giant City State Park.

University Housing

SAMUEL L. RINELLA, *Director*

University Housing is dedicated to creating and maintaining in its residential facilities a physical environment conducive to study and academic excellence; friendly interchange of ideas among students; providing a sensitiveness to the needs and aspirations of students living together in small and large groups; providing conditions which meet the health and safety standards of the University and civil authorities; providing quality food service at reasonable cost by offering appealing, nutritious, and wholesome food in quantity adequate for the physical requirements of young men and women. Because of this concern and interest, University Housing seeks continually to improve on-campus housing in a variety of ways.

University Housing also seeks continually to influence both the availability and quality of off-campus housing for student in terms of meeting as fully as possible the educational and economic needs of students living off-campus as these needs relate to housing and the objectives of the University.

University Housing provides on-campus housing for approximately 5,600 single, undergraduate students. Furnished and unfurnished apartments are available for 576 married students. Numerous accepted living centers for freshmen and sophomore students off-campus aid in the relationship between the student's living environment and his progress toward the attainment of his educational goals at the University.

VICE PRESIDENT FOR DEVELOPMENT AND SERVICES

T. RICHARD MAGER, *Vice President for Development and Services*

The vice president for development and services is responsible for developing and administering institutional development service and relations programs. Internal and external objectives are met through Alumni Services, Area Services, Communications, Facilities Planning, Information Processing, Institutional Research, Intercollegiate Athletics, Photographic Service, Security, Southern Illinois University Foundation, University Exhibits, University Graphics, University News Service, and University Press.

As individual units or in task groups, various functions are provided by these departments. Alumni and friends are given a forum for participation in and donation to the University's continuing goals and objectives. Capital budget planning, long-range facility planning, administering a university data base and providing electronic data processing services are provided internally. A publishing outlet for scholars is available. All publications are coordinated and an institutional identity program is administered. An effective public relations program through all of the above activities and services is continually being developed and upgraded to meet the needs of the University and its many publics.

Alumni Services

ROBERT ODANIELL, *Director*

Alumni Services serves as a liaison between the University and its alumni. It maintains records on all graduates and provides necessary information in the academic units for various surveys and reports. It serves as a base for the SIU Alumni Association (a separate not-for-profit corporation) and carries the University message to thousands of alumni throughout the world through its publications and alumni club meetings. It conducts programs such as the "Great Teacher" award, and grants scholarships, provides for student loans, and the funding of selected faculty research projects.

Area Services

REX D. KARNES, *Coordinator*

Area Services directs and coordinates projects and special area functions.

Activities include planning special public service projects, working with University committees and staff in performing services for the citizens of Southern Illinois, and maintaining an office through which area organizations and individuals can channel requests for University services.

Channels of communication between the University and area special interest groups, organizations, and agencies are also maintained.

Communications

DON HECKE, *Director*

The Communications office has the responsibility for the internal and external public relations and information programs and offerings of the University.

Included is the responsibility for the direction of the University's basic communications units.

Facilities Planning

RINO BIANCHI, *Director*

The Facilities Planning office is responsible for the preparation of capital budgets, coordinating the planning and contract awards for new construction, and for all major repairs of campus facilities. It serves as professional counsel for campus planning and related planning elements. The office develops and recommends adoption of space planning standards, evaluates the effectiveness of such standards and makes necessary revisions, internal space utilization reports, and reassignment of existing space based on long-range campus planning.

Information Processing

THOMAS D. PURCELL, *Director*

Information Processing supports the University's academic and administrative needs and is available to support area computing needs. The research activities of faculty and students and instructional activities are supported through the Academic Computing Division of Information Processing. Administrative activities are supported through the Management Systems Division. Major areas of service include maintenance of a large program library, consulting about computer-related problems, and periodical, non-credit instruction in computing.

Institutional Research

LOREN B. JUNG, *Director*

Institutional Research provides staff services to the faculty and administrative components of the University. The office is primarily interested in studies relating to the problems of institutional management and the effects of institutional policy. Studies are selective and approved through the University hierarchy of decision points.

Intercollegiate Athletics

DOUGLAS WEAVER, *Director*

Intercollegiate Athletics serves the students, University community, alumni, and the region by providing experience in intercollegiate athletics as well as affording recreation and entertainment, and serving as a rallying point. Athletic teams are named the Salukis, and compete in the top division of the National Collegiate Athletic Association in ten sports: baseball, basketball, cross-country, football, golf, gymnastics, swimming, tennis, track, and wrestling.

Photographic Service

JACK COOPER, *Director*

Photographic Service is responsible for photography and photographic laboratory services to all campus constituencies. This includes communications ser-

vice support, photographic aids to teaching, research, publication, and visual presentation. A permanent repository of negatives made by its photographers is maintained. The unit's services are available to the southern Illinois area for special photographic needs not otherwise available.

Security

VIRGIL TRUMMER, *Director*

The Security office provides the University community with police service to insure the protection of persons and property and the enforcement of law. The Security office is responsible for providing the following services for the University community: emergency services; inspectional services; traffic regulation and supervision; protection of persons and property including state property, records, and personnel; enforcement of University rules and regulations, appropriate state, municipal, and county ordinances and statutes as they apply to University protection; coordination between University and local law enforcement agencies; and direction in the development of overall security policy for the University.

Southern Illinois University Foundation

JOSEPH GOODMAN, *Director*

The Southern Illinois University Foundation is a not-for-profit organization chartered by the State of Illinois in 1942. It is authorized to solicit and receive gifts for the benefit of Southern Illinois University in the advancement of scientific, literary, and educational purposes. The foundation is admirably suited to give expression to the philanthropy of all persons interested in the University, regardless of their income or the size of their estates. Flexibility of program, supervised by the foundation board of directors qualified to judge the merits of all projects, keeps the foundation a living, effective force in the University's growth and betterment.

University Exhibits

HERBERT J. MEYER, *Director*

University Exhibits is a design, production, and services center which utilizes special audiovisual media for internal and external communication. The unit's functions include the production and presentation of slidefilms (electronically synchronized sound and slide programs) and preparation and circulation of static exhibits relating to the University. Such materials are furnished for conferences and professional meetings, staff recruitment, staff and student orientation, public information and relations, regional services, and special events. Technical consultation within the University is also provided.

University Graphics

A. B. MIFFLIN, *Director*

University Graphics acts as publisher for all official University publications and provides publishing services, writing, editing, designing, warehousing, and distributing, to the University community on request. University Graphics is responsible for the interpretation and control of all institutional graphics and

the design of all visual materials involving the name and symbol of the University and includes all visual aspects of official publications. It is expedited through a corporate identity program which sets standards for typography, format, style, and application of the University's emblem or logo.

University News Service

PETER B. BROWN, *Director*

University News Service functions as the liaison between the University academic community and diverse interest groups in all parts of the world. It relates, and often translates from academic idiom to everyday language, the happenings of the University community for both printed and electronic media. News Service stories permit the taxpayers to know what is going on in their University. It promotes educational, economic, and cultural programs and spreads the word of University student and employee accomplishments in academics, sports, or activities.

University Press

VERNON STERNBERG, *Director*

The Southern Illinois University Press, established in 1953 and formally organized in 1956, publishes approximately 60 books a year, ranking in the upper fifteen among the more than 65 university presses in the United States. Primarily works of scholarship, the Press's list, now numbering over 500 titles, includes *The Papers of Ulysses S. Grant* and *The Early Works of John Dewey*.

Women's Intercollegiate Athletics

CHARLOTTE WEST, *Director*

Women's intercollegiate athletics offers undergraduate women the opportunity to become proficient and to compete in eleven varsity sports: badminton, basketball, cross country, field hockey, golf, gymnastics, softball, swimming, tennis, track and field, and volleyball. Women's intercollegiate athletics is affiliated with the state, midwest, and national Association for Intercollegiate Athletics for Women.

VICE PRESIDENT FOR STUDENT AFFAIRS

BRUCE R. SWINBURNE, *Vice President for Student Affairs*

Student affairs has the responsibility, within the guidelines established by the president, to see that students are provided every opportunity to benefit in the fullest manner from their college experiences and to provide a coordinated program of student services and welfare. It is the students' responsibility to seek these services and to use the facilities provided according to their needs.

The vice president for student affairs coordinates the student affairs areas of Student Life, Student Services, Student Work and Financial Assistance, and Health Service. The vice president for student affairs works closely with these areas, with other university services, and with faculty in planning and imple-

menting an integrated program of activities and services for students. The vice president for student affairs along with the staff in Student Life also works closely with student government in the development of policies concerning students and the student code. Students should be cognizant of University requirements and regulations.

Health Service

SAM McVAY, *Administrative Director*

DON KNAPP, *Medical Director*

The goal of the University student health program is to reduce the incidence and severity of health impairment among students. The principal constraints upon this program are 1) what is technologically possible, and 2) what is economically possible.

This goal is addressed through seven distinct but interrelated program thrusts: 1) Primary Care. The primary care or out-patient services are provided by a team of eight physicians and forty other allied health staff as well as many student workers. The services include x-ray, laboratory, pharmacy, etc. 2) Intermediate Care. Intermediate care or infirmary care is available in the twelve bed infirmary. Intermediate care is provided for non-acute illness when skilled nursing care is required, but the student is not in need of hospitalization. 3) Secondary Care. Hospitalization is provided at Doctors Hospital in Carbondale and includes coverage of up to 31 days of hospitalization per illness. 4) Speciality Care. Speciality care is available in the Carbondale area through contractual arrangements with local specialists. 5) Emergency Care. Emergency care is provided through Doctors Hospital on a 24-hour basis. Ambulance service is available for emergency transportation in cooperation with Doctors Hospital. 6) Extended/Supplemental Care. Medical services that are not provided in the Carbondale area or are needed for acute or emergent care when an eligible student is out of the area are covered through special arrangements with an insurance company. Questions regarding claims for out-of-the-area care should be directed to the staff of the student health program. 7) Prevention Programs. Through effective prevention and health maintenance while a student, present and future health impairment level may be substantially influenced. Some desired behavioral influence may be achieved by classroom learning; much, however, will be achieved by the work of health care professionals in their interpersonal relationships with the students. In response to the concern for the physical and social environment of the student and health maintenance, prevention programs provide information, educational counseling, and referrals. The main areas of programming include education for healthful living, human sexuality, drug crisis, coordination with other health resources in the University and community, and reduction of health impairment upon the educational process.

Student Life

LORETTA OTT, *Acting Dean*

The dean of student life coordinates and gives administrative direction to the units of Student Activities, Resident Housing area deans, Recreation and Intramurals, and the Student Life Office. Services provided by these units include recognition of student organizations, liaison with student governments, orientation for new students and parents, meaningful student/faculty contacts via various student activities, recreational and intramural programs, coordina-

tion of the University student disciplinary program, and the coordination and evaluation of educational programming in the University residence halls.

Student Activities Center

The Student Activities Center, located on the third floor of the Student Center, exists to meet student needs in the area of co-curricular activities in the belief that the curriculum and the co-curriculum each contribute to the total collegiate learning experience. Toward this end, the Students Activities Center recognizes over 240 student organizations with interests ranging from sailing, to radio broadcasting, to chess. Professional staff members also advise and help coordinate the activities of student government, the Student Government Activities Council (SGAC), M.O.V.E. (Mobilization of Volunteer Effort), and other major campus organizations. To facilitate student programming and operations, the Student Activities Center also provides a myriad of services to recognized student organizations. These include duplicating service, sign making, mail boxes, membership referral, faculty directory, display facilities, room scheduling, a notary public, and a leadership training program. The Student Activities Center also maintains all policies and procedures of the University relating to student organizations, student activity fees, and student activities in general.

Educational and Cultural Programming

The office of educational and cultural programming works with special programming in many ways. Programming in the residence halls, in University approved off-campus halls for freshmen and in married student housing, serves to increase faculty/student contact and to provide a more academic atmosphere. Furthermore, the office works on general campus programs, such as Women's Day on Campus, Career Fair, and with certain recognized student groups and honor societies. In addition, the office administers the campus housing activity fee accounts. These accounts consist of the fees that students who live in married student housing and the University residence halls pay for special programming. Programming ranges from movies, picnics, dances, area wide newspapers, special film series, libraries, and children's programs. Each area has a student government and programs for its own unique needs and population.

Recreation and Intramurals

Recreation and intramural athletics at Southern Illinois University at Carbondale afford the entire student body an opportunity to enjoy impromptu free play physical recreation opportunities as well as organized athletic competition. Organized to provide a wide range of physical activity, these programs offer opportunities that challenge the interests of all students. Voluntary participation and program involvement provide an important avenue to the extracurricular experience afforded the student.

Several objectives and guiding principles give direction to the recreation and intramural program in its effort to be of maximum service to students. These are as follows: 1) to encourage self-participation, transforming the mass of students from passive spectators into active participants, 2) to offer a variety of physical activities balanced between vigorous and light exercise, team and individual events, and adolescent and adult sports to meet present interest and future needs, 3) to provide incentive to a far larger number of students in need of competitive experiences, on an equal basis with fellow students, 4) to provide an arena whereby social relations and attitudes can be developed and high standards of sportsmanship nurtured, and 5) to foster fair dealings with

all individuals and groups, providing multitudes of leadership and cooperative experiences.

A handbook describing the campus recreation and men's intramural athletic program may be obtained from the office of Recreation and Intramurals located in the SIU Arena, Room 128. A similar handbook outlining the women's intramural athletic program may be obtained from Room 122 in the Dorothy Davies Gymnasium.

Residence Life

The primary objective of the residence life unit is to assist in the development of a living-learning atmosphere in University residence halls for the academic, social, and personal development of students. The basic responsibilities of the residence life unit are student government, student activities and programming, and student discipline. Resident life coordinators and their graduate assistants work closely with University housing personnel to develop effective student committees and boards. Resident life personnel report to the assistant dean of Student Life. Their office is in Building A, Washington Square.

Student Discipline

The office of Student Life is responsible for student discipline. The coordinator of student discipline processes all complaints and appeals. Cases in University housing areas are referred to the residence life unit. Some initial jurisdiction cases are handled at the coordinator's level. All appellate cases are processed by the coordinator's office. Cases involving academic cheating are referred to this office for implementation.

Student Services

TERENCE BUCK, *Dean*

The Office of Student Services coordinates and provides direction and administrative support for the programs and activities of the Career Planning and Placement Center, the Counseling Center, the Specialized Student Services office, and the Student Affairs Research and Evaluation Center. Primary objectives of the office are to assure maximum utilization and evaluation of existing services, and planning and development of new services and programs which meet student needs and contribute to the mission of the University. The office also provides special services for married students.

Career Planning and Placement Center

The Career Planning and Placement Center provides students with the opportunity to explore careers, identify interests, examine work values, and assess abilities. The Career Planning and Placement Center provides job vacancy listings, assists students to prepare for entry into the labor market, and counsels students who have not chosen a major. The Career Planning and Placement Center is staffed with professional career counselors, placement consultants, and psychometrists. The Career Planning and Placement Center is visited annually by over 400 recruiters who represent 175 businesses, government agencies, schools, and service agencies who schedule interviews with graduating students. The Career Planning and Placement Center is also a regional test center for students who wish to enter professional or graduate school, and administers the Law School Aptitude Test, the Graduate Record Exam, the Miller Analogy Test, and others. The cooperative professional practice program, included in the Career Planning and Placement Center, is an

optional educational pattern that integrates periods of paid career-related work experience into academic programs. Such experience can be either full-time work every other semester (alternate co-op) or part-time work every semester (parallel co-op). This intermixing of theoretical study and professional practice provides for career orientation, professional development, personal growth, dollar income, and ultimate employment. Co-op, the experience that pays, is available to men and women in essentially all academic areas and without geographical limitations. Students interested in any career-related work experience such as internships, co-ops, work study, or other paid or unpaid work experience are advised to contact their academic department, the Career Planning and Placement Center, the Student Work and Financial Assistance Office, and the bachelor degree program at the School of Technical Careers.

Counseling Center

The Counseling Center is staffed with professional counselors qualified to assist students with personal development and resolution of problems. Personal problems, marital adjustment difficulties, social skill development, parental conflict, and sex role awareness development are areas of frequent concern to students. Counseling is provided through one to one student-counselor contact or in group discussion within an atmosphere of confidentiality and trust.

Specialized Student Services

The office of Specialized Student Services provides specialized services and adapts general services to assist physically handicapped students and students with visual impairments to obtain maximum academic, social, and cultural benefits within the University community. Services provided include pre-admission evaluation and guidance, orientation and mobility training, architectural barrier education, van transportation service, wheelchair repair, attendant training/referral, educational resource/supply center for blind and visually impaired students, proctoring standardized and academic exams, liaison with academic departments and other University offices, and liaison with state and federal agencies.

Women's programming, also contained within specialized student services, provides information and referral services, and workshops and seminars to meet women's needs in the areas of education, employment, and supportive activities. Outreach programs have been developed for numerous groups within the University and the community.

The *Handbook for Married and Graduate Students* is published to provide relevant information regarding the Carbondale community and the University. Spouse ID cards are issued, on request, to nonstudent spouses. The spouse ID may be used as an ID card in the community and to purchase student rate tickets for University entertainment and athletic events.

Student Affairs Research and Evaluation Center

The Student Affairs Research and Evaluation Center offers a variety of research and testing services. Classroom exams can be scored and statistical analyses may be obtained to assist the instructor in evaluating his students and improving his exams. The Evaluation of Instruction program is also coordinated through the Student Affairs Research and Evaluation Center. Through this program, students are given the opportunity to evaluate their instructors and courses. Numerous research projects are also conducted through the center. These projects are directed at improving instruction and services through the use of student opinion, and identifying the characteristics of Southern Illinois University at Carbondale students. The center is also respon-

sible for providing training to advanced graduate students interested in testing and student affairs research.

Student Work and Financial Assistance

FRANK C. ADAMS, *Director*

The primary aim of the Student Work and Financial Assistance Office is to provide an opportunity for students to enter and continue in higher education without excessive financial burdens. The programs function as an integral part of the total educational experiences of students who may lack financial resources, who may excel scholastically or who may wish to develop skills in practical work situations. The student work and financial assistance programs include part-time work on and off campus, cooperative work-study and summer employment, various forms of federal and state assistance (work-study, loans, grants, scholarships, awards, prizes, and private agency awards and loans).

The cooperative work-study program is a joint effort by the Office of Student Work and Financial Assistance, the Career Planning and Placement Center and various academic departments to provide students career-related work experience in business and industry.

2 Academic Regulations and Procedures

ADMISSION POLICIES, REQUIREMENTS, PROCEDURES

In order to attend classes at Southern Illinois University at Carbondale, students must gain official admission to the University and must complete the enrollment process, which includes advisement, registration, and payment of fees.

Applications for admission to the University are accepted anytime during the calendar year but should be initiated in ample time to permit the necessary work of processing to be completed.

University entrance examination scores must be furnished by all beginning freshmen and transfer students who have fewer than 26 semester hours (39 quarter hours) of acceptable transfer work prior to their being considered for admission to the University. Currently ACT (American College Testing Program) is the required entrance examination.

Students not otherwise eligible for admission may be admitted with the approval of the director of admissions and the dean of the academic unit they wish to enter, providing they submit tangible evidence that additional education can be successfully completed.

Admission of Freshmen

To be eligible for admission, applicants must be graduates of recognized high schools. Graduates of non-recognized high schools may be admitted to the University by completing successfully the General Educational Development Test. Persons who have not completed high school may also qualify for admission by completing the GED test provided they meet the requirements to write this examination.

All admissions granted students while in high school are subject to the completion of high school work and maintenance of rank upon which the admission was made.

Students entering the University as freshmen are enrolled in the schools or colleges within the University that offer the academic programs they indicate they plan to pursue. Students who are undecided as to the course of study they want to follow are enrolled in the General Studies Division.

Admission of Freshman to Baccalaureate Programs

High school graduates who rank in the upper half of their graduating classes based upon class rank or by score on the University entrance examinations are eligible for admission to any semester. Students who qualify for admission to any semester will be considered for admission after completion of the sixth semester of high school.

In-state high school graduates who rank in the lower half of their graduating classes are admissible to the summer session on a conditional basis for the purpose of demonstrating their capability to continue their education. These students can qualify for fall semester attendance by carrying a minimum academic load of eight semester hours and completing them with at least a *C* average. Otherwise, the next earliest time they might enter will be the following summer and under the same conditions.

Admission of Freshmen to Associate Degree Programs

In-state high school graduates who rank in the upper two-thirds of their graduating classes based upon class rank or by score on the University entrance examinations are eligible for admission to any semester. Graduates who rank in the lower one-third of their graduating classes are admissible to the summer session on a conditional basis.

Out-of-state high school graduates who rank in the upper half of their graduating classes based upon class rank or by score on the University entrance examination are eligible for admission to any semester. Out-of-state high school graduates who rank in the upper two-thirds of their graduating classes but not in the upper half are admissible to the summer session on a conditional basis.

Both in-state and out-of-state students admitted for the summer session on a conditional basis can qualify for fall semester attendance by enrolling for a minimum academic load of eight semester hours and completing them with at least a *C* average. Otherwise, the next earliest time they might enter will be the following summer and under the same conditions.

Students who did not meet the University baccalaureate admission requirements to enter as freshmen from high school during the regular academic year and elect to enter an associate degree program in the School of Technical Careers will not be considered for admission to a four-year program until they have completed 26 semester hours and have an overall *C* average.

Students may be admitted only during the fall semester to associate degree programs in dental hygiene and physical therapist assistant.

Admission of Transfer Students

For academic purposes undergraduate applicants for admission to the University are considered to be transfer students when they present eight semester hours or more of graded work for transfer consideration; otherwise, they are considered for admission as new freshmen.

In the event transfer students' grade point averages cannot be determined, their admission may require, in addition to a review of their college performance, standardized examinations and secondary school records.

Transfer students who have been suspended for any reason other than academic failure must be cleared by the Student Life Office before admission will be granted by the director of admissions.

Transfer students will be admitted directly to the school or college in which their major fields of study are offered. Students who are undecided about their major fields of study will be admitted to the General Studies Division.

Transfer students from non-baccalaureate programs will ordinarily be placed in the upper division unit in which they plan to continue their studies. Students admitted to associate degree programs of the School of Technical Careers will be enrolled in that academic unit.

Admission of Transfer Students to Baccalaureate Programs

Students who have an overall *C* average, 2.0 on a 4.0 scale (all institutions) and are in good academic standing at the last institution of attendance will be eligible for admission for any semester. Students can also be considered for admission on the basis of a 2.0 grade point average as calculated by the institution last attended as a full-time student. However, a student's scholastic standing will be determined on the basis of all work completed and grades recorded on his transcript. In addition, students transferring with fewer than 26 semester hours (39 quarter hours) of acceptable credit must also meet the requirements established for beginning freshmen.

Students who have less than a *C* average, 2.0 on a 4.0 scale, and at least 56 acceptable semester hours or 84 acceptable quarter hours and who are eligible to continue at the last school attended may be considered for admission on scholastic probation provided there has been an interruption of schooling for at least one semester, summers excluded, and provided tangible evidence can be submitted that additional education can be successfully completed. Tangible evidence might include: (1) an interruption of schooling longer than the minimum required above, (2) military experience, (3) work experience, or (4) previous academic performance.

Students who have been suspended for poor scholarship from the last institution attended may be considered for admission provided they have at least 56 semester hours or 84 quarter hours of acceptable transfer credit, there has been an interruption of schooling for at least one year, and there is tangible evidence that additional education can be successfully completed.

Students who have graduated with an associate degree in a baccalaureate-oriented program from a two-year institution may enter Southern Illinois University at Carbondale in good academic standing any semester provided they have not taken additional college-parallel work since their graduation. If they have, their admission will be considered on the basis of their conformity to the University's regular transfer admission standards.

Students applying for admission to the University to pursue baccalaureate programs from programs not so oriented will be considered for admission as follows: (1) students from regionally accredited institutions will be considered on the basis of their conformity to the University's normal transfer admission standards, and (2) students who have completed a two-year or equivalent program with a *C* average in an institution which has not been accredited by a regional accrediting association will be admitted if the institution is (a) one falling within the normal purview of a regional accrediting association or (b) one recognized by an accrediting body which itself is recognized by the National Commission on Accrediting or the U. S. Office of Education. Students who have attended institutions as outlined in (2) above and who have not completed two-year programs or equivalent or who have less than a *C* average are considered for admission as entering freshmen.

Admission of Transfer Students to Associate Degree Programs

Students with an overall *C* average, 2.0 on a 4.0 scale, and in good academic standing at the last school attended may enter associate degree programs in the School of Technical Careers any semester. Students can also be considered for admission on the basis of a 2.0 grade point average as calculated by the institution last attended as a full-time student. However, a student's scholastic standing will be determined on the basis of all work completed and grades recorded on his transcript. Those students whose grade point averages are less than a *C*, 2.0 on a 4.0 scale, and who are eligible to continue at the school of last attendance may be considered for admission for the spring semester or summer session.

Students who have been suspended for poor scholarship may be considered for admission only for the summer session provided: (1) there has been an interruption of schooling for at least one semester or two quarters and (2) there is tangible evidence that additional education can be successfully completed.

Students who are admitted to associate degree programs in the School of Technical Careers as transfer students and then decide at a later date to enter a four-year program must meet the University's baccalaureate admission requirements at the time of transfer.

Students may be admitted only during the fall semester to associate programs in dental hygiene and physical therapist assistant.

Transfer Credit

Transfer credit for students admitted to baccalaureate programs from baccalaureate programs is evaluated for acceptance toward University and General Studies requirements by the Office of Admissions and Records after the admission decision has been made. The evaluation toward satisfaction of specific curriculum requirements is done by the department or agency directing the specific curriculum. General principles governing the acceptance of transfer work are as follows:

1. All transfer work is entered on the students' official records of academic work maintained in the Office of Admissions and Records.

2. Credit transferred on or after June 1, 1967, from an accredited two-year institution is limited only by the provision that students must earn at Southern Illinois University at Carbondale or at any other approved four-year institution at least 60 semester hours required for a degree, except that students must meet the residence requirements for a degree from the University. These requirements can be found elsewhere in this catalog. Conditions governing the acceptance of credit from four-year higher educational institutions also apply to acceptance of credit from two-year institutions.

3. Completion of an associate degree based on baccalaureate-oriented sequences transferred from an accredited two-year institution is considered to provide the student with (a) junior standing and (b) completion of general education requirements.

Further information on the application of transfer work toward satisfying General Studies and graduation requirements may be found elsewhere in this catalog.

Transfer credit evaluation from educational programs not baccalaureate oriented and to be applied to baccalaureate programs will be subject to the general conditions listed above and to the additional following points:

1. Credit presented by students who have completed associate or equivalent programs with a *C* or better average in regionally accredited institutions will be evaluated. Applicable credit will be posted to the students' educational record cards without condition.

2. Credit presented from regionally accredited institutions when the students have not completed associate or equivalent programs, or who have less than a C average, will be evaluated so that the students may receive advice regarding registration and remaining requirements, but the credit will not be counted toward a baccalaureate degree until they have established a C average in their first 24 calculated semester hours at the University.

3. Credit presented from institutions not regionally accredited but which fall within the normal purview of regional accrediting associations or from institutions recognized by accrediting bodies recognized by the National Commission on Accrediting or the U.S. Office of Education will be evaluated as in point 2 above provided the student has completed a two-year program or its equivalent. Otherwise no credit will be considered for transfer.

Transfer credit for students admitted to associate degree programs in the School of Technical Careers is evaluated by the chairman in charge of the program the student plans to follow at the school.

Admission of International Students

In general, international students must meet the same academic standards for admission as those required of native students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, international students are selected upon the basis of the excellence of their former academic work, personal recommendations of former teachers and colleagues, the judgment of the University as to whether it has academic programs of benefit to the students and the students' financial arrangements for support during the normal period of time required to reach the objectives of their studies.

In addition to submitting copies of secondary school records and, when applicable, college transcripts, international students must also submit scores from TOEFL examination (Test of English as a Foreign Language). TOEFL scores are required of all international students who (1) have completed their secondary education in a country where English is not the native language, (2) have completed fewer than two years study in a United States high school, (3) have completed fewer than two years (60 semester hours) of collegiate training in an accredited United States college or university. Students who have completed their secondary education in a country where English is the native language are required to submit scores from either the American College Test or the Scholastic Aptitude Examination.

International students whose secondary school and college records are acceptable for admission purposes must also receive high enough TOEFL scores for unconditional admission. Students with a TOEFL score of 525 or higher will be granted unconditional admission. Applicants whose TOEFL score is between 475 and 524 will be admitted contingent upon completion of an English re-test administered by the Center for English as a Second Language. Students who fail to submit TOEFL scores, or who do not submit acceptable TOEFL scores, will be required to attend courses at the Center for English as a Second Language.

International students interested in making application to Southern Illinois University at Carbondale should address their inquiries to the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. At that time they will receive a copy of the *Information for Prospective International Students* booklet which outlines in greater detail information about the University and admissions and procedures of particular interest to international students.

Admission of Former Students

Former students of Southern Illinois University at Carbondale not in attendance during the semester preceding application for admission must apply to the Office of Admissions and Records for re-entrance prior to registration.

Former students who are not in good standing must clear their status before the admissions office will prepare their registration permit so it is advisable for such students to initiate re-entrance clearance with the Office of Admissions and Records early so that all inquiries may be answered and the applicants can find time to complete any requirements that may be imposed upon them. (See Scholastic Probation and Suspension System elsewhere in this catalog for further information.)

Admission of Special Categories of Students

Several types of students are given special consideration when seeking admission to the University. These are described below:

Admission of Veterans

Veterans seeking admission or re-admission to the University are admitted in good standing regardless of their previous academic record provided that either (a) no additional education has been attempted or (b) such additional education has been of C quality or better.

Early Admission Policy for Freshmen

Exceptionally capable high school students who (a) have completed their junior year, (b) are recommended by their high school principals, and (c) are approved by the director of admissions of the University will be permitted to enroll for University courses to be taken concurrently with their senior year of high school work. Such students will also be permitted to enroll for University courses offered during the summer session between their junior and senior years of high school, without being concurrently enrolled in the secondary school. Enrollment during the summer for students participating in this early admission program is limited to eight semester hours.

It is expected that high school principals will judge each case on its individual merits, and that in making their selections and recommendations they will consider such things as:

- (a) the rank held by the students in their high school classes;
- (b) the results of any standardized test which the students may have taken;
- (c) the opinion of the students' teachers regarding their aptitude for college level work; and
- (d) the opinion of the students' teachers regarding the students' having attained sufficient maturity to adjust to the social and emotional interactions involved.

Developmental Skills Program

The University operates an experimental program through which educationally and socially disadvantaged students are admitted to the University each fall who would otherwise not meet the University's regular admission standards. These students, in addition to submitting the regular academic credentials, must also submit three letters of recommendation. The students who enter this experimental program are admitted in good standing and must participate in this program for one year.

Admission of Adults as Unclassified Students

Adults who have never enrolled in an institution of higher education may enroll for courses regardless of their ability to qualify for admission under the present admission policies. Students in this special category are assumed to be non-degree applicants and are not required to submit all of the academic records required for admission to a degree program. Persons interested in seeking admission as adult unclassified students are encouraged to write to the Office of Admissions and Records.

Applying for Admission

High school students are urged to initiate the admission application process during the seventh semester in high school. Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their date of matriculation if they plan to transfer without interruption. Transfer students who have not completed one year of study may initiate the admission process after the completion of one semester or one quarter of work. Students who delay their admission processing until near the start of the semester which they wish to enter may find that they are unable to do so because all necessary documents required before the admission decision will be made have not been received. It is particularly important for transfer students to initiate the admission application process well before the starting date of the semester. Otherwise, delay in getting started, undesirable class schedules, or inability to attend the desired semester may result. Documents required in the admission process are listed below.

The admission process is started by writing the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, indicating a desire to apply and requesting admission materials. The materials that are sent contain the application and related forms that need to be completed along with procedural instructions. Information is also included relative to housing and financial assistance.

Documents Required for Admission

Among the items required by the University before an admission decision is made are the following:

1. The completed application form from the students.
2. Transcripts of previous educational experience. For high school students the request is for two copies of the high school transcript. For transfer students the request is for an official transcript from each institution previously attended sent directly to this University from the previously attended school. In addition, transfer students presenting fewer than 26 semester hours (39 quarter hours) of completed work must provide to the University a copy of their high school transcript.
3. University entrance examination scores. All students applying for admission directly from high school and all transfer students who have completed fewer than 26 semester hours (39 quarter hours) must have their official ACT scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240.
4. Physical examination form. New students admitted as full-time undergraduate students are requested to have a physical examination performed by a private physician recorded on the form provided by the University. This must be done prior to registration in the University. The

completed form is to be sent directly to the University Health Service. In case of a religious belief which is in conflict with the plan, special arrangements may be made with the University Health Service.

Applications for housing and financial assistance are separate from the admission process and directions relating thereto are contained in the brochures on these subjects which the students receive as part of the admissions process.

ORIENTATION, ADVISEMENT, REGISTRATION

Through a carefully designed system of orientation, academic advisement, and registration the University attempts to assure entering students an efficient and effective introduction to the University prior to the time they start class attendance. A more extensive program is provided for those students entering during the fall semester while abbreviated activities are in operation for the other semesters.

For many years the University has used an advance registration system through which all continuing students and most new students are expected to be academically advised and registered for a semester before its actual start.

During July and August several weeks are set aside for new freshman and transfer student orientation, advisement, and registration. Students are invited to have their parents accompany them so that they too may obtain a better understanding of the University and its operation than might otherwise be the case. The orientation program on these days is of necessity an introductory type in which questions about admission, housing, financial assistance, etc., can be answered. Later, at the start of the fall semester new students participate in three days of orientation activities during which time they receive a well rounded introduction to university life.

Starting in May and extending through June the University contacts new students admitted to arrange appointment dates for them to come to the campus. Through this process only the number of students that can be efficiently handled are involved each day. Students who cannot come to the campus during the summer or who delay applying for admission beyond the advance registration period may register at the start of the fall semester but are required to come to campus a few days before those who have registered during the summer period.

Similar procedures are followed at the start of the other semesters. Admitted students are kept informed of orientation, advisement, registration procedures, and the times when they occur by the Office of Admissions and Records in cooperation with the Student Activities Office. The latter office is the University's administrative agency that assists the large number of volunteer students who actually operate the New Student Days activities at the start of each semester.

Academic Advisement

Academic advisement is administered by the academic units. Each unit employs a selected group of trained advisers devoting part-time directly to this function. They operate under the supervision of a chief adviser who is responsible to the dean of the academic unit.

The University accepts the importance of the academic advisement function. Insistence on receipt of transcripts and ACT scores prior to admission serves not only to determine admission but later provides suitable educational information to the advisers upon which decisions can be made relative to the proper courses to advise the students to take. On the basis of this information the advisers can make intelligent decisions relative to students who should receive advanced standing in courses or who should be urged to take proficiency examinations in courses about which they appear to be already well informed.

Registration

Registration for any session of the University is contingent upon being eligible for registration. Thus advance registrations, including the payment of tuition and fees, are considered to be invalid if the students are later declared to be ineligible to register due to scholastic reasons. Students may also be considered ineligible to register because of financial or disciplinary reasons if this is certified to the registrar by the appropriate University office.

Detailed information about the dates and procedures for advisement and registration appears in each semester's Schedule of Classes, which is available from the Office of Admissions and Records.

Students should be familiar with the following general points about registration.

1. Students are officially registered for only those courses which appear on their schedule of classes. Changes therefrom can be made only through the processing of an official program change.
2. Students may not drop a course merely by stopping attendance. (See Withdrawal from Courses and from the University section of this chapter.)
3. There is a terminal date near the end of each semester or session after which program changes or withdrawal from the University are not permitted except for unusual circumstances. This date is usually one week before final examinations start. The specific date appears in each appropriate Schedule of Classes.

Withdrawal from Courses and from the University

Outlined below are the procedures to be followed by students when withdrawing from courses and when withdrawing from the University (all courses for which registered).

COURSE WITHDRAWALS

Students officially withdraw from courses through the program change process. This process starts with the academic adviser and is completed at the Registration Center. Official course withdrawals during the first five weeks in a semester result in no letter grade being assigned. Withdrawal deadlines for shorter sessions are printed in the appropriate Schedule of Classes, and students are subject to these printed deadlines. Thereafter, a *WP* (passing) or *WE* (failing) grade is assigned in keeping with the progress being made. For graduate students only, *W* grades may be given when no basis for evaluation has been established. Merely stopping attendance in courses without the processing of a program change will result in *ABS* grades being assigned. An *ABS* counts the same as an *E* or *WE* for scholastic purposes.

Students who are prevented, for reasons beyond their control, from processing program changes during the first five weeks of a semester and who later, during the semester, seek to do so with the request to have the program

change backdated are referred to their academic deans for approval or disapproval, if the requests are to be withdrawn from only part of the courses being taken.

WITHDRAWAL FROM THE UNIVERSITY

Students who find it necessary to withdraw from the University after school has started and who are on campus should contact the Office of Admissions and Records in person to initiate the withdrawal process. If they are unable to come to campus, they may write the Student Life Office asking that it process a withdrawal.

Students who advance register, including the paying of tuition and fees, and who then find they cannot attend school must process an official withdrawal the same as do those who withdraw after school starts. In this case the process is the same as outlined in the paragraph above. Students who advance register but do not clear tuition and fees by the announced deadline date have their registrations cancelled by the University.

Students who seek to have a withdrawal from the University backdated from the date of actual processing are referred to the Student Life Office for review and approval or disapproval prior to processing, provided grades have not yet been given.

Students seeking to withdraw from sessions already completed are referred to their academic deans when the situation involves a possible change of grade, whether one course or all courses are involved. The deans forward their recommendations via letter to the Office of Admissions and Records. The deans specify the effective date of withdrawal which then serves as a basis for grade changes or other purposes involved.

Academic deans may refer students to the Student Life Office for professional evaluation when requests for grade change consideration involve matters that might be more appropriately considered by that office. The Student Life Office provides the academic deans with professional evaluations of the cases. The deans inform the Student Life Office of case dispositions.

Reasons for grade changes need to relate either to grade processing errors on the part of the University or to the inability of students to perform some required step for reasons beyond their control.

Students who officially register for a session may not withdraw merely by the stopping of attendance. They need to process an official withdrawal form. Otherwise, grades of *ABS* will be given.

Refer to the section Payment and Refunding of Tuition and Fees later in this chapter for information about the refunding of tuition and fees when withdrawing from the University. Refer to that section, also, relative to special considerations extended to students withdrawing from school for extended military service.

COSTS AND HOUSING ACCOMMODATIONS

It is difficult to indicate the specific cost of attending the University because of the differences in personal spending habits. However, the following information can be helpful.

Tuition and Fees

Tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions necessitate. All assessments are on

a per-hour basis, with 12 hours considered full time. Students will be assessed the following tuition and fees each term:

Semester Hours Enrolled	TUITION		STUDENT FEE SCHEDULE ¹		
	(Illinois Resident)	(Non- Resident)	On-Campus ²	Extension and Residence-Centers ³	Permanent Full-Time or Permanent Part-Time Employee ⁴
1	\$ 18.00	\$ 54.00	\$48.25	\$16.00	\$ 7.50
2	36.00	108.00	50.00	17.75	7.50
3	54.00	162.00	52.50	20.25	8.25
4	72.00	216.00	55.00	22.75	9.00
5	90.00	270.00	57.50	25.25	9.75
6	108.00	324.00	60.00	27.75	10.50
7	126.00	378.00	62.50	30.25	11.25
8	144.00	432.00	65.00	32.75	12.00
9	162.00	486.00	67.50	35.25	12.75
10	180.00	540.00	70.00	37.75	13.50
11	198.00	594.00	72.50	40.25	14.25
12+	214.00	642.00	75.00	42.75	15.00

¹ No waiver is authorized. The student fees are used as follows: *Student Center Fee* provides funds for the operation of the Student Center; *Student Activity Fee* provides funding for student organizations and activities on campus; *Athletic Fee* provides partial funding for the university intercollegiate athletic program; *Student Welfare and Recreation Fund (SWRF) Fee* provides funding for construction and operation of physical facilities for student recreation and operation of recreational and intramural programs; *Student Welfare and Recreation Fund-Medical (SWRF-M) and Student Medical Benefit Fees* provide funding for a comprehensive student health program including emergency service, hospitalization, specialty, primary, intermediate, or infirmary care, and prevention program.

² A student will pay the full Student Medical Benefit Fee of \$17.25, which will entitle him to full medical benefits at the Health Service. An on-campus student may seek a refund of the Student Medical Benefit Fee within the first four weeks of each semester by contacting the administrative director of the Health Service. The Student Medical Benefit Fee is not charged for instruction offered off campus. Faculty, administrative staff, and civil service personnel are not permitted to pay the Student Medical Benefit Fee. The on-campus student fee includes allocations to the Student Medical Benefit Fee, Student Welfare and Recreation Fund, Athletic Fund Fee, Student Center Fee, and Student Activity Fee.

³ Includes allocations to the Student Welfare and Recreation Fund, Athletic Fund Fee, Student Center Fee, and Student Activity Fee.

⁴ Includes Student Center Fee only. A civil service employee claiming this tuition and fee remission must receive approval of his department head and director of the Personnel Office prior to enrolling for courses.

In addition to the above fees, there is a graduation fee. For further information contact the Office of Admission and Records.

Students holding valid state scholarships are exempt from the above tuition and fees to the extent provided by the terms of the specific scholarship held. An Illinois State Scholarship may cover all tuition and fees or the scholarship may be a partial award. Also, honorary scholarships, which have no monetary value, may be awarded. An Illinois State Teacher Education Scholarship, Illinois Scholarship for Dependents of Prisoners of War, Illinois Bilingual Scholarships, and Illinois Military Scholarship, an Illinois General Assembly Scholarship, or an Illinois County Scholarship exempts the student from paying the tuition, the student activity fee, and the graduation fee.

Adult education course fees are computed on the basis of approximately sixty cents per contact hour.

Other charges which students may incur are those for departmental field trips, library fines, and excess breakage. Also, students taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.

Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.

Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition later in this chapter.

Payment and Refunding of Tuition and Fees

Tuition and fees are payable each semester during the academic year. Students who register in advance receive a tuition and fee statement and may pay either by mail or in person at the Bursar's Office, by the deadline date, in accordance with instructions accompanying the tuition and fee statement. Otherwise their advance registration is cancelled and they must register again later. Students who register at the start of a semester must pay tuition and fees at the time of registration.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they have processed the program change within the first three weeks of the semester, they should make application for a refund at the Office of Admissions and Records after the fifth week of the semester. Mail requests for a refund will be honored.

A refund of tuition and fees will be made to students who officially withdraw from school by the deadline which occurs within the first three weeks of the semester. Specific withdrawal deadlines are printed in each semester's Schedule of Classes, and students are subject to those printed deadlines. If the students withdraw in person, they will receive an immediate cash refund. If they withdraw by mail, they will receive a refund check in approximately four weeks after the withdrawal has been received by the Office of Admissions and Records. No refunding of tuition and fees is made for a withdrawal occurring after the first three weeks, except as described in the next paragraph. The specific deadline dates for each semester appear in that semester's Schedule of Classes.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). Students will be refunded full tuition and fees paid if they enter military service during the first five weeks of school. If students withdraw during the sixth through tenth weeks of school, they will be refunded half of the paid tuition and fees, and they will receive one-half credit without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the tenth week, students will receive no refund, but will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

Housing Costs and Accommodations

The housing rates are subject to change from time to time. Students interested in housing, either on-campus or off-campus, will receive housing information including housing policies immediately after being admitted. Prospective students may write to University Housing for housing information at any time.

On-Campus

The rate for board and room in on-campus residence halls for men and women is from \$1,115 to \$1,200 per academic year. The University provides all room equipment and linen; the student must furnish his towels, blankets, and bedspreads. Housing facilities for married students include furnished efficiency apartments renting for \$113 per month; furnished one-bedroom apartments

renting for \$129 per month; furnished two-bedroom apartments renting for \$138 per month; two-bedroom unfurnished apartments renting for \$126 to \$133 per month; and unfurnished three-bedroom apartments renting for \$139 per month.

Inquiries about on-campus housing should be directed to the supervisor of contracts, University Housing, Building D, Washington Square.

Off-Campus

The Off-Campus Housing Office maintains a list of University-approved housing. Rates for facilities for freshmen range from \$385 to \$450, which provides room and board; and, for sophomores \$100 to \$350 per month depending upon whether board is included or not.

Inquiries about off-campus housing should be directed to the Off-Campus Housing Office in Building C, Washington Square.

Estimated Total Expenses

Because of the wide range in personal spending and in living costs, it is difficult to make an estimate of total expenses. Illinois residents living in on-campus residence halls would spend approximately \$1,800 for board, room, tuition, and fees for an academic year while out-of-state students would need approximately \$2,600 for the same purposes. Miscellaneous expenses need to be added to these figures to determine the total cost.

GRADING, SCHOLASTIC REGULATIONS, AND CREDIT

Grading System

GRADE SYMBOL	DEFINITION	GRADE POINTS PER HOUR
A,	Excellent	4
B,	Good	3
C,	Satisfactory (this is intended to be the average grade) ...	2
D,	Poor, but passing	1
E,	Failure	0
P,	Pass. Hours earned apply toward graduation but do not affect student grade point average. Used only in Pass / Fail system. See Pass / Fail Grading System below.	
F,	Fail. Hours do not apply toward graduation and do not affect student grade point average. Used only in Pass / Fail system. See Pass / Fail Grading System below.	
W,	Authorized withdrawal with no basis for evaluation established. Work may not be completed. Approved grading symbol on graduate level only except for unusual circumstances where an academic unit dean recommends a change in grade from <i>ABS</i> to <i>W</i> for an undergraduate student.	
WP,	Authorized withdrawal with passing grade.	
WE,	Authorized withdrawal with failing grade. Counts same as an <i>E</i> for grade average purposes	0

WF,	Withdrawal with failing grade. Does not affect student's grade point average. Authorized grade only for students taking courses on Pass / Fail basis. See Pass / Fail Grading System below.	
INC,	Incomplete. Has permission of instructor to be completed. See explanation below regarding failure to complete.	
DEF,	Deferred. Used only for graduate courses of an individual, continuing nature such as thesis or research.	
PR,	Work in progress. See explanation below concerning failure to complete.	
ABS,	Unauthorized withdrawal. Counts same as an <i>E</i> for grade average purposes	0
S,	Satisfactory. Used for noncredit courses except spring quarter, 1970, when it was used to indicate satisfactory completion of credit courses as well. Effective fall, 1970, the <i>S</i> and <i>U</i> grades were used for the grading of thesis and dissertation credit on the graduate level and for certain other individually approved 500-level courses.	
U,	Unsatisfactory. Used for noncredit courses except spring quarter, 1970, when it was used for credit courses as well. (See also <i>S</i> grade)	
CR,	Credit. No letter grade assigned.	
AU,	Audit. No grade or credit earned.	

Grading System Explanation

The grades of *A*, *B*, *C*, *D*, *E*, *WE*, and *ABS* are included in determining student grade point averages.

The *INC* grade is handled differently for undergraduate and graduate students. For undergraduate students, effective with the 1973 summer quarter and thereafter, an *INC* grade must be changed to a completed grade within a time period designated by the instructor but not to exceed one year from the close of the quarter or semester in which the course was taken; otherwise it automatically becomes an *E*, or *F* in *P/F* courses, at the end of the one year and the *E* is included in grade point computation. Prior to the 1973 summer quarter the *INC* grade remained an *INC* grade unless completed within the time limit. For graduate students the *INC* grade continues to operate as it did for undergraduate students prior to the 1973 summer quarter.

The *PR* grade may be assigned in certain individually approved courses when a student has been unable to complete the requirements by the end of the semester. The department must state how additional instruction will be provided for those students not making adequate progress, which may include registering for the course a second time. A *PR* grade must be changed to a completed grade (by whatever technique the department has specified) within a time period to be designated by the instructor, not to exceed one year from the close of the semester in which the course was taken. If the grade is not changed within this period, it automatically becomes an *E*, or *F* in *P/F* courses, and is to be included in grade point computation, except in the case of *F*. A *PR* grade may be assigned to a student only once for any course.

Students registering for a course on an *audit* basis receive no letter grade and no credit. Auditor's registration cards must be marked accordingly, and they pay the same fees as though they were registering for credit. They are expected to attend regularly and to determine from the instructor the amount of work expected of them. If auditing students do not attend regularly, the instructor may determine that the students should not have the audited course placed on their record cards maintained in the Office of Admissions and Re-

cords. Students registering for a course for audit or credit may change to a credit status or vice versa through the official program change method during the first five weeks of a semester. Thereafter, the change may not be made.

Prior to the 1971 summer quarter, courses in which *D*'s or *E*'s were received could be repeated and the last grade was used in computing students' grade point averages. The repeating of a course does not remove the previous grade from students' official academic record cards. Effective with the 1971 summer quarter all grades earned carrying grade point values are considered when computing students' grade point averages, including each earned grade in a repeated course.

The official records of students' academic work are maintained in the Office of Admissions and Records.

Changing of Grades

Grades given at the end of a course are final and may not be changed by additional work or submitting additional materials.

When work is completed in courses for which *INC* grades have been given, instructors notify the Office of Admissions and Records of that fact, along with the final grade to be given, by means of the Grade Change Form.

The Grade Change Form is also used by instructors when they find they have submitted an incorrect grade. When the original grades submitted are final grades, the instructors' departmental chairmen and academic deans are also asked to approve the changes of grade.

Occasionally, students may want to question grades given, either for accuracy or for removal of penalty grades in situations when they were unable to perform some required step for reasons beyond their control. In the latter cases grades of *WE* or *ABS* have been recorded. In a case involving grade accuracy a student should originally seek redress from the instructor. Should further appeal be necessary, it should be made to the student's academic dean who may then confer with the dean of the instructor's unit if they are different units. In these cases final resolution remains within the instructional unit. In cases involving student inability to perform necessary steps beyond their control, students should consult with their academic deans. In these situations the dean may recommend, in writing, to the Registrar, Office of Admissions and Records, a change in grade from *ABS* or *WE* to *W* when conditions warrant.

Pass / Fail Grading System

The purpose of the Pass / Fail grading system is to encourage students to broaden their education by undertaking intellectual exploration in elective courses outside their area of specialization without having to engage in grade competition with students specializing in those courses.

The present Pass / Fail grading system for undergraduate students in good academic standing is governed by the conditions listed below:

1. There are two types of Pass / Fail courses: *mandatory* Pass / Fail courses, in which all students will receive either a *P* or an *F*; and *elective* Pass / Fail courses, in which students can elect either the traditional grading system or the Pass / Fail option.
2. No course is available under the Pass / Fail option without prior designation by the department or program in which the course is offered, and that current authorization procedures are followed.
3. The Pass / Fail grade is *mandatory* in courses in which, in the judgment of the department or program, the traditional grading system is inappropriate.
4. Pass / Fail grade is *mandatory* for all proficiency examinations.
5. The number of *elective* Pass / Fail credits is limited to sixteen semester hours overall, and to six semester hours in any General Studies area.

6. Formal permission of the major department or program is required before students are permitted to elect Pass / Fail for a major or minor requirement.
7. Students who earn an *A* or *B* in an *elective* Pass / Fail course are allowed to have their grades changed to an *A* or *B* by requesting this change at the Office of Admissions and Records before the end of the following semester.
8. Neither the *P* nor the *F* is counted in calculating the grade point average.
9. Instructors who teach *elective* Pass / Fail courses are not informed which students are taking these courses on a Pass / Fail basis.
10. A grade of *D* or higher is required for students to receive a *P*.

Students follow usual registration procedures when registering for courses on a Pass / Fail basis. They may change to or from pass/fail grading through the fifth week of a semester with an adviser's approval. After that time until the last day to make program change, they will be permitted to change from pass/fail to regular grading with an adviser's approval or to pass/fail from regular grading with the students' academic dean's approval.

Scholastic Standing

The matter of scholastic standing is quite often of importance to students both while in school and later when they present a transcript of their educational record in support of their application for employment or additional schooling.

At the end of each semester or session of attendance a grade report is prepared for each student showing, in addition to the grades earned that semester or session what his scholastic standing is and what his grade point average is for the semester or session, and for his over-all record. It is important that students understand the University's system for computing grade point averages and the various grade point average requirements.

Effective with the summer quarter, 1972, transferred grades are not to be used in determining students' calculated grade point average, except that transfer students who are admitted on probationary status will be required to earn a 2.0 average semester by semester until a total of 12 semester hours has been earned, before students are removed from probation.

The significance of the above should be clearly understood by transfer students when studying the general baccalaureate degree requirements. A 2.00 (*C*) average is required for the work taken at this University.

In computing students' grade point averages all grades of *A*, *B*, *C*, *D*, *E*, *WE*, and *ABS* are included in determining the number of *calculated* hours. Each hour of these grades (1 hour of *A* is worth 4 grade points) is given its numerical grade points, and the total number of calculated hours is then divided into the total number of grade points to determine the student's grade point average.

Effective with the 1971 summer quarter all earned grades carrying grade point values are considered when computing students' grade point averages, including each earned grade in a repeated course that is taken during the 1971 summer quarter and thereafter. When computing averages through 1971 spring quarter the policy contained in the 1970-71 Undergraduate Catalog is followed.

Scholastic Probation and Suspension System

Students are expected to make satisfactory progress toward a degree, certificate, or other approved objective. To ensure that students are making

progress, their records are checked against the regulations below. Students in Good Standing are placed on Scholastic Probation when they have the following number of passed semester hours and more than the corresponding number of negative points:

<i>Passed Hours</i>	<i>More Than Negative Points*</i>
Fewer than 56 semester hours	12
56 but fewer than 86 semester hours	8
86 or more semester hours	4

*Negative points are the number of grade points below the number which would be required for a C average. For example, a student with 50 calculated hours must have 100 grade points for a C average. If he has only 87 grade points, he has 13 negative points. Negative points may also be calculated by assigning two positive points to each hour of A, one positive to each of B, none of C grades, one negative point for each hour of D, and two negative for each of E. Total positive and negative points are added and the difference between the two totals with a negative result would be the negative points.

Students on Scholastic Probation who earn below a C (2.0) average for a semester or summer session will be placed on a status of Scholastic Suspension. Students on Scholastic Probation who earn a C average or above for the next semester or summer session will be allowed to continue in attendance on Scholastic Probation until their averages are raised to the point where they have fewer than the allowable negative points listed above.

Transfer students admitted on Scholastic Probation will remain in that status until they have earned a minimum of 12 semester hours of credit with at least a C average at Southern Illinois University at Carbondale. If they earn below a C for any session while on Scholastic Probation, they will be placed on Scholastic Suspension.

Students placed on Scholastic Suspension may seek reinstatement after a minimum of two semesters' interruption but must furnish tangible evidence that additional education can be successfully undertaken.

While on Scholastic Probation a student is subject to certain conditions that do not prevail when he is in Good Standing. These are as follows:

- He may not enroll for more than 14 hours per semester unless approved to do so by the dean of his academic unit.
- He may not participate in extracurricular activities or hold a major office unless special permission is granted. Petitions for permission to do so are filed with the coordinator of the Student Activities Office.
- Other limitations may be established by the appropriate officials of the University or by the academic unit within which the student is enrolled.

Credit

Unit of Credit

Southern Illinois University at Carbondale converted from the quarter to early semester calendar effective Fall 1974. All references to hours of credit in this catalog are to semester hours unless otherwise specified. One semester hour of credit is equivalent to one and one-half quarter hours. One semester hour of credit represents the work done by a student in a lecture course attended fifty minutes per week for one semester and, in the case of laboratory and activity courses, the stated additional time.

Class Standing

Southern Illinois University at Carbondale requires students to earn at least 120 semester hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has

completed fewer than 26 hours; a sophomore, from 26 through 55; a junior, from 56 through 85; and a senior 86 or more.

Academic Load

Academic load guidelines are as follows:

	<i>Regular Semester</i>	<i>8-Week Summer Session</i>
Minimum load for full time	12	6
Average load	15-16	7-8
Maximum load without dean's approval	18	9
Maximum load ¹	21	11

¹This maximum may be exceeded by very special action of the respective academic dean, and rarely more than once in the student's degree program.

Students on scholastic probation may not take more than 14 hours without approval of the head of their academic unit. Students employed full-time may not register for more than eight hours.

The University considers 12 hours as the minimum number to constitute full-time attendance. This is the figure used for enrollment reporting purposes, by the Illinois State Scholarship Commission, and for Public Law 358 on the undergraduate level. Students attending school under some type of scholarship or assistance program that requires them to be enrolled as full-time students should check with the University office administering the program on this point. Further information on Public Law 358 is available at the Student Work and Financial Assistance Office.

Extension (Off-Campus) and Correspondence Credit

The University accepts credit earned through extension, off-campus, or correspondence programs toward the bachelor's degree. Not more than 30 semester hours may be taken in correspondence work.

Southern Illinois University at Carbondale does not operate a correspondence program. Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of C quality or better.

The University offers off-campus courses whenever (1) it is apparent there is a need and potential enrollment to justify scheduling, (2) it is possible to obtain a faculty member to instruct the class, and (3) adequate laboratory and library facilities are available. Tuition is \$18.00 per semester hour of credit.

Persons may enroll for off-campus work on an audit basis provided facilities are available. They must receive permission of the instructor to do so, and they must pay the same tuition as though they were registering for credit.

Further information may be obtained from the Division of Continuing Education.

Credit for Military Experience

Students who have served one year or more of active duty and who have received an honorable discharge may receive two hours of aerospace studies credit, two hours of physical education credit, and two hours of health education credit. Service of six months to one year may result in two hours of freshman aerospace studies credit; less than six months of active service does not allow any college credit. Credit previously earned in college in these areas may result in reduced credit granted from that stated above.

Credit will be accepted for USAFI courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level GED

tests. In evaluating credit possibilities based upon formal service-school training programs, the recommendations of the American Council on Education as set forth in the U.S. Government bulletin, *Guide to the Evaluation of Educational Experiences in the Armed Forces*, are followed.

In order to receive credit for military service veterans must present a copy of discharge or separation papers to the Office of Admissions and Records.

GRADUATION PROCEDURES

The academic requirements for the various baccalaureate degrees are listed in Chapter 3. Presented here are the procedures students expecting to graduate must follow.

Degree candidates must file written application for graduation with the Office of Admissions and Records no later than the first week of the last semester in attendance before the desired graduation date. If candidates complete requirements at the end of the fall semester, they should apply during the first week of the fall semester.

The application forms are available in the Office of Admissions and Records. The forms may be obtained through the mail for students not in attendance. The application process includes the clearance of the graduation fee at the Bursar's Office prior to its filing with the Office of Admissions and Records. Candidates must order their caps and gowns through the University Bookstore (in the Student Center) and should register with the Career Planning and Placement Center.

In addition to completing the steps for application for graduation, students are responsible for determining that they are meeting all graduation requirements and have no outstanding financial obligation to the University. To assure that students are meeting the academic requirements, each academic unit provides a graduation check-up service through its academic advisement process, through which the satisfying of academic requirements can be verified. Even though the University does provide an academic check on graduating students, this is done primarily to be sure that it is graduating students who have met the requirements. The advising of individual students as to their progress is a service provided them and does not relieve students of their responsibility to make certain they are meeting the requirements. Students should check with their academic advisers as to the procedures they should follow in this matter as they approach graduation.

Graduation exercises are held each year at the end of the spring semester and summer session. Students must attend commencement to graduate, unless they have obtained permission to be graduated *in absentia*. Students can request the latter either through the Office of Admissions and Records or their academic dean.

It is anticipated that by the spring 1976 commencement procedures will be developed so diplomas will be issued at the commencement ceremonies. For student approved for graduation *in absentia*, diplomas will be mailed shortly after the commencement date.

The University has a Graduation Appeals Committee whose function it is to hear students' petitions to be permitted to graduate even though they have not satisfied all University graduation requirements. The committee hears only those cases involving University requirements for a baccalaureate degree. Appeal relative to a major or academic unit requirement is through the appropriate administrative official. Ordinarily, the Graduation Appeals Commit-

tee will give consideration to an appeal only if there is tangible evidence that the matter at issue is of an unusual nature and that it has resulted due to conditions beyond control of the student. Appeal is initiated through the Office of Admissions and Records.

UNIVERSITY RECOGNITION OF HIGH SCHOLASTIC ACHIEVEMENT

A Scholastic Honors Day convocation is held each spring to honor students exhibiting high scholastic achievement. Candidates for a bachelor's degree in May or August who have maintained a grade point average of 3.50 or higher for all of their work through the fall semester of their senior year receive special honor. All other students having a 3.50 average are also honored at the convocation. The 3.50 average is required for all work taken at Southern Illinois University at Carbondale and, in the case of transfer students, for the total record. Except in the case of graduating students, students must be attending full time to be eligible.

Graduating students with scholastic averages of 3.90 or higher receive University highest honors; those with 3.75—3.89 averages receive University high honors; and those with 3.50—3.74 receive University honors. This is recorded on the commencement program, on the students' academic record cards, and on their diplomas. The averages are required for the work taken at Southern Illinois University at Carbondale and, in the case of transfer students, for the total record.

Successful participants in all-campus honors programs which require maintenance of appropriate minimal scholastic standards, such as the President's Scholar Program receive recognition by notation on their academic records and on their diplomas. Honors courses, individual honors work, and honors curricula, all designed to serve students with high scholastic potential, are offered by departments in the School of Agriculture, the home economics departments in the College of Human Resources, the College of Liberal Arts, and the College of Science. A departmental or unit honors program consists of no fewer than six nor more than fourteen semester hours in research or independent study which is counted toward the students' majors. Some honors programs require a comprehensive examination at the end of the junior year and again at the end of the senior year. Grades may be deferred at the end of the first semester, but not from one school year to the next.

A variety of professional, departmental, and fraternal honorary organizations offer recognition and membership based upon scholastic achievement. Election or selection to most honoraries is noted at the Scholastic Honors Day convocation.

PROGRAM FLEXIBILITY FOR THE STUDENT

Southern Illinois University at Carbondale offers students a wide variety of programs on all higher educational levels. Chapter 4 lists specialized programs available on the associate and baccalaureate levels. In addition, the University gives constant attention to methods whereby it might better serve present day educational needs. Described below are opportunities provided students to

either (1) earn credit through means other than the traditional classroom method or (2) develop programs better suited to individual student needs than are the already established programs described in Chapter 4. While greater flexibility is the goal, the University exercises appropriate supervision to ensure that flexibility is accompanied by educational soundness.

Credit by Means other than Classroom Attendance

Several methods are provided for students to earn credit by means other than the traditional classroom method. The methods currently available are described below.

High School Advanced Placement Program

Through the High School Advanced Placement Program high school students who are qualified through registration in an advanced placement course in their high schools or through other special educational experiences may apply for advanced placement and college credit through the Advanced Placement Program of the College Entrance Examination Board, 475 Riverside Drive, New York, New York 10027. To receive credit, students must earn a grade of 3, 4, or 5. Interested high school students should write the Office of Admissions and Records to learn the current listing of courses for which credit may be earned through this program.

Ordinarily, the maximum credit granted through advanced placement examinations is fifteen hours. It is nonresident credit, does not carry a grade, and is not used in computing the students' averages. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of fifteen hours. Students may appeal to academic deans to be granted more than fifteen hours.

College Level Examination Program

Through the General Examinations of the College Level Examination Program (CLEP), students may apply for credit which will substitute for general studies courses. With a score of 480 or higher on the appropriate examination, students may possibly receive six semester hours of credit in each of the three fields of natural sciences, social sciences and history, and humanities. Effective Summer, 1975, the mathematics test will require a score of 580. With a score of 480 or higher on the English examination, students are permitted the opportunity to write an essay to gain proficiency credit in GSD 101 (three semester hours). The credit received equates to 100-level General Studies credit. The amount of credit actually received through CLEP will be reduced by whatever 100-level General Studies course work, or its equivalent in the case of transfer students, is taken either prior or subsequent to the taking of the CLEP examinations. In the case of mathematics, a reduction in CLEP credit will occur for course work taken below calculus. An exception to this reduction of credit is permitted for the taking of elementary foreign languages on the 100-level.

CLEP examinations should be taken at one of the national testing centers and the results sent to the local CLEP coordinator. The results are then forwarded to the Office of Admissions and Records for evaluation.

Proficiency Examinations

Through its proficiency examination program the University recognizes the importance of providing encouragement for academically talented students.

Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Application forms are available at the departmental offices.

The following general rules govern the proficiency examinations for undergraduate credit.

1. Students who believe they are qualified to take a proficiency examination should check with the department offering the course to determine their eligibility to do so; students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.

2. Credit not to exceed thirty hours (fifteen hours toward an associate degree), including credit through the College Entrance Examination Board, Advanced Placement Program, and the College Level Examination Program may be earned through proficiency examinations. Credit will be nonresident. (A combined total of 40 hours may be earned through proficiency examinations and credit for work experience.)

3. Upon passing proficiency examinations students are granted course credit and receive a *Pass* grade. Their records will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination." Students who fail a proficiency examination receive a *Fail* grade. This results in no penalty to the students. They will not receive credit and their records will show nothing regarding the proficiency examination. However, the proficiency examination grade report form will be filed in the students' folders for reference purposes.

4. Students may not take proficiency examinations for the same course more than one time. Neither may they take a proficiency examination in a course in which they have previously received a grade.

5. No credit granted by proficiency examinations will be recorded until the student has earned at least 12 hours of credit of *C* grade or above in residence at Southern Illinois University at Carbondale.

Credit for Work Experience

Work experience currently plays a role in educational programs although perhaps not so defined. For example, the internships are a common instructional technique and student teaching might be so defined. Southern Illinois University at Carbondale recognizes that there might well be a number of undergraduate programs for which work experience has a meaningful relationship. It, therefore, permits those undergraduate programs to grant credit for work experience that relates to students' areas of specialization. The credit granted is to apply to the major program and is awarded only upon approval by the major departments. Credit earned by work experience is limited to 30 hours and any combination of credit for proficiency examinations and credit for work experience is limited to 40 hours. Credit granted for work experience is considered nonresident credit when granted for work that is not part of a regular instructional course. Students should consult with their major departments to see whether they approve credit for work experience.

Three-Year Baccalaureate Degree Program

It is possible for students to complete the regular four-year baccalaureate degree program in three years by utilizing proficiency examinations. The equivalent of one year of credit (30 semester hours) may be earned by this method. Students who desire to follow the three-year program should make that fact known to their academic advisers at the earliest possible date so their eligibil-

ity can be determined. A combination of programs may be employed to accumulate these 30 hours as described above in the section on Credit by Means Other than Classroom Attendance.

President's Degree Program

The President's Degree Program is responsible for working with the colleges and their departments to provide a distinctive educational experience for those students of high motivation and talent who are interested in pursuing interdisciplinary studies on the undergraduate level. The basic objective of this program is to provide the opportunity to create the learning environment which optimally suits such students' needs and talents.

To help accomplish the above objective two special provisions are made for students admitted to the program. Upon submission of the College Level Examination Program General Examinations (with scores consistent with the University's acceptance of CLEP credit) all requirements for graduation other than the total number of hours of credit may be waived. Also, program members will choose an appropriate faculty adviser to help them plan logical and challenging curricula enabling them to attain their personal academic goals. Students may remain in the program as long as they are able to (a) show they are receiving some benefit from membership consistent with the objectives of the program, and (b) maintain a 3.0 grade point average. Degrees will be awarded through the regular degree granting units.

Those students who are in the top seven percent on national test scores and rank in the top ten percent of their high school classes are eligible to apply for admission as freshmen. Continuing and transfer students should have a 3.5 grade point average to warrant serious consideration for membership.

Inquiries about the President's Degree Program should be addressed to the director, President's Scholar Program.

Technical Careers Degree Program

The University provides an opportunity to continue educational pursuits toward a baccalaureate degree for students possessing an occupational, technical, or other similarly connotated educational background. The School of Technical Careers offers a Bachelor of Science degree in technical careers programs for such students. Individually designed programs are developed to meet the individual needs of the students. Programs do not duplicate baccalaureate programs already offered by other academic units.

The regular University baccalaureate admission and other academic requirements and regulations are followed in the technical careers program. Persons interested in further information about this program should contact the dean, School of Technical Careers, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. (See also School of Technical Careers in Chapter 3.)

University Studies Degree Program

The University Studies degree program permits students an additional option toward the baccalaureate degree. The program is designed to provide students a liberal education without the necessity of satisfying the requirements of a

major. Should students in this program somehow complete the requirements for an approved major, the spirit of the degree precludes the certifying of the major on the official academic record card. Students may work toward either a Bachelor of Arts or Bachelor of Science degree in university studies. The University Studies degree program is administered by the General Studies Division under the general supervision of the vice president for academic affairs and provost. See the description in Chapter 4.

Students interested in the University Studies degree program should consult with the director of the General Studies Division for more information prior to entrance into the program.

Special Major

Individual students with academic needs not met in any of the existing majors within the University may arrange a program of courses more suited to their special requirements. See the description of the Special Major in Chapter 4.

Opportunities for Study Abroad

There are five alternatives available to Southern Illinois University at Carbondale students for studying abroad.

1. A student may enroll in a Southern Illinois University study/travel program. These programs include academic courses where regular University credit is awarded to students every summer with varied opportunities available. Announcements concerning the coming summer programs are usually available in the Division of Continuing Education about the first of each year.

2. A student may study abroad through an experiment in international living/SIU cooperative program. The Experiment in International Living is an accredited educational institution located in Brattleboro, Vermont.

3. A student may travel and study abroad on an independent basis. Prior arrangements can be made through departments to enroll in study abroad courses available in selected departments or in the course, University 388.

4. A student may enroll in a study/travel program conducted by another United States institution and transfer the credit to this institution. Information concerning programs offered by United States institutions can be obtained from the coordinator for international travel and study in the Division of Continuing Education.

5. A student may enroll in either a foreign institution or an independent location of a foreign institution. The student should check with the Office of Admissions and Records before registering since many foreign institutions are not accredited.

DETERMINATION OF RESIDENCY STATUS

Following are the, "Regulations Governing the Determination of Residency Status for Admission and Assessment of Student Tuition."

For the purpose of these regulations an *adult* is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. The words *he* or *his* also apply to a female unless otherwise stated or clearly indicated. The term *the State* means the State of Illinois. Except for

those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for resident status as defined in these regulations the nonresident status shall be assigned.

Residency Determination

Evidence for determination of residence status of each applicant for admission to the University shall be submitted to the director of admissions at the time of application for admission. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the student is classified in error as a resident student, the change in tuition shall be applicable beginning with the term following the reclassification; if the student is classified in error as a non-resident, the change in tuition shall be applicable to the term in which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations.

Adult Student

An adult, to be considered a resident, must have been a bona fide resident of the State for a period of at least twelve consecutive months immediately preceding the beginning of any term for which he registers at the University, and must continue to maintain a bona fide residency in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Minor Student

The residence of a minor shall be considered to be, and to change with, and follow:

a. That of his parents, if they are living together, or the living parent if one is dead; or

b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or, in the absence of court decree or order, that of the father unless the person has continuously resided with the mother for a period of at least twelve consecutive months immediately preceding his registration at the University, in which latter event his residence shall be considered to be that of his mother; or

c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent had been a natural parent; or

d. That of the legally appointed guardian of the person; or

e. That of the natural guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult with whom the person has resided and by whom he has been supported for a period of at least twelve consecutive months immediately preceding his registration at the University for any term if the person's parents are dead or have abandoned him and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian

No parent or legal or natural guardian will be considered a resident of the State unless he (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing his legal residence to some other State or country, within the State.

Emancipated Minor

If a minor has been emancipated, is completely self-supporting, and actually resides in the State, he shall be considered to be a resident even though his parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered to actually reside in the State of Illinois if he has maintained a dwelling place within the State uninterruptedly for a period of at least twelve consecutive months immediately preceding the beginning of any term for which he registers at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Married Student

A nonresident student, whether male or female, or a minor or adult, or a citizen or noncitizen of the United States, who is married to a resident of the State, may be classified as a resident so long as he continues to reside in the State.

Persons Without United States Citizenship

A person who is not a citizen of the United States of America, to be considered a resident, must have permanent resident status with the United States Immigration and Naturalization Service and must also meet and comply with all of the other applicable requirements of these regulations to establish resident status.

Armed Forces Personnel

A person who is actively serving in one of the armed forces of the United States and who is stationed and present in the State in connection with that service and submits evidence of such service and station, shall be treated as a resident as long as the person remains stationed and present in Illinois. If the spouse or dependent children of such member of the armed forces also live in the State, similar treatment shall be granted to them.

Minor Children of Parents Transferred Outside the United States

The minor children of persons who have resided in the State for at least twelve consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Definition of Terminology

To the extent that the terms bona fide residence, independent, dependent, and emancipation are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

Voter registration, filing of taxes, proper license and registration for the driving or ownership of a vehicle, and other such transactions may verify intent of residency in a state. Neither length of University attendance nor continued presence in the University community during vacation period shall be construed to be proof of Illinois residence.

Procedure for Review of Residency Status or Tuition Assessment

A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of residency status and an adjustment of the tuition assessed. The written claim must be filed within 10 school days from the date of assessment of tuition or the date designated in the official University Calendar as that upon which instruction begins for the academic period for which the tuition is payable, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If the student is dissatisfied with the ruling in response to the written claim made within said period, he may appeal the ruling to the legal counsel by filing with the appropriate official within twenty days of the notice of the ruling a written request.

These regulations shall become effective for the winter quarter, 1972, and shall remain in full force and effect unless and until subsequently amended or repealed by action of the Board of Trustees.

Applications for residency status are available at the Office of Admissions and Records.

RELEASE OF STUDENT INFORMATION

The University follows a policy for release of student information in compliance with federal regulations. More specific information may be obtained from the Office of Admissions and Records.

3 Academic Programs

DEGREES OFFERED

Southern Illinois University at Carbondale grants the following degrees:

ASSOCIATE

- Associate in Art
- Associate in Applied Science

BACCALAUREATE

- Bachelor of Arts
- Bachelor of Music
- Bachelor of Music Education
- Bachelor of Science

ADVANCED

- Master of Arts
- Master of Business Administration
- Master of Fine Arts
- Master of Music
- Master of Music Education
- Master of Public Affairs
- Master of Science
- Master of Science
in Education
- Specialist Degree
- Doctor of Philosophy

In addition to the above degrees, Southern Illinois University at Carbondale offers undergraduate courses in preprofessional areas.

The School of Law and the School of Medicine offer professional degrees. Information about the School of Law may be obtained by writing the dean, School of Law, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. Information about the School of Medicine may be obtained by writing the dean, Southern Illinois University School of Medicine, P.O. Box 3296, Springfield, Illinois 62708.

For information concerning academic programs on the advanced degree level, refer to the Graduate Catalog or write the dean, Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

DEGREE REQUIREMENTS

Associate Degree

Each candidate for an associate degree must complete a minimum of 60 hours of credit in approved courses. Each student must maintain a C average. In addition to the technical courses each program requires certain General

Studies courses to be taken. The degree granting unit for the associate degree is the School of Technical Careers.

Baccalaureate Degree

Every bachelor's degree candidate must meet the University's requirements and the requirements of his academic unit. The specific requirements in General Studies and in each college and school are listed later.

Each candidate for the degree must complete a minimum of 120 hours of credit in approved courses. The General Studies requirements total 45 hours although there are methods available to reduce the number as listed in this chapter under General Studies. Each student must have an overall *C* average, and a *C* average in the major. These averages are required in work taken at Southern Illinois University at Carbondale. A student who does not have an overall *C* average may graduate, assuming all other graduation requirements are fulfilled, by satisfying either of the two following methods of computing the average: (1) by excluding from calculation of the grade point average for graduation a maximum of ten semester hours of *D* or *E* grades earned outside the major which were completed prior to the last 60 semester hours of work completed at Southern Illinois University at Carbondale, or (2) by earning a grade point average of 2.10 or higher for the last 60 semester hours of work completed at Southern Illinois University at Carbondale.

To receive a bachelor's degree from Southern Illinois University at Carbondale a student must either present a total of three years work (90 hours) earned at Southern Illinois University at Carbondale or complete the last year in residence. The last year shall be considered as 30 semester hours.

A student who desires a second bachelor's degree must complete 30 hours in addition to those required for the first degree and must fulfill the requirements for the second degree. Of these 30 hours, a minimum of 10 must be taken in residence at the University. If a student received his first bachelor's degree from another university, 30 hours in residence are required to fulfill the requirement for the second bachelor's degree.

Preprofessional Programs

Preprofessional students may, subject to certain conditions, obtain a bachelor's degree after three years' work (90 semester hours) at Southern Illinois University at Carbondale and one or more year's work in a professional school. During their three years of residence at Southern Illinois University at Carbondale, they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking.

In some cases the completion of major requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate divisional head. Also, there needs to be completion of at least one year of professional school with acceptable grades in a Class A medical school, a Class A dental school, a Class A veterinary school, an approved law school, an accredited physical therapy or medical technology school, a hospital plan approved by the University or an accredited school of osteopathy. In all cases, all University graduation requirements must be met. It is advisable for a student interested in this program to make his decision to seek a bachelor's degree before entering the professional school so that any questions may be clarified at an early date.

The 3/2 program of the College of Business and Administration is available to qualified transfer students and students majoring in areas other than busi-

ness. The program permits a student to devote a part or all of the fourth year of study to fulfilling requirements for the Master of Business Administration degree. For details, contact the associate dean for graduate studies in business administration.

General Studies Requirements

The General Studies Curriculum for the baccalaureate degree is divided into five major areas; the requirements in each area are listed below.

Area A Man's Physical Environment and Biological Inheritance	9
Area B Man's Social Inheritance and Social Responsibilities	9
Area C Man's Insights and Appreciations	9
Additional course work from Areas A, B, or C	3
Area D Organization and Communication of Ideas	11
Area E Human Health and Well Being	4
Total	45

Students must complete a total of 30 semester hours in Areas A, B, and C. Within each Area they must complete a minimum of 9 semester hours, and they must include course work from at least 3 different disciplines in each Area. The remaining 3 semester hours may include coursework from any one of Areas A, B, or C, or from any combination of these three Areas.

Within Area D, the following are required: 5 semester hours of English composition; 4 semester hours of mathematics; and 2 semester hours of speech or other oral communication as offered in Area D. Some programs and upper division academic units have specific requirements for demonstration of competence in English composition. A student may determine which programs or units have this requirement by referring to college and school requirements listed in this chapter and by referring to program requirements listed in Chapter 4.

In Area E, the student may choose any 4 semester hours to satisfy the General Studies requirements; however, prospective teachers should also check the section in this catalog titled Professional Education Experiences.

MEETING GENERAL STUDIES REQUIREMENTS

These requirements may be met by any of the following subject to the rules and limitations appropriate to each means.

1. Completion of appropriate General Studies courses (listed at the beginning of the next chapter) with a passing grade;
2. Proficiency credit by examination for General Studies courses or approved substitute courses.
3. Proficiency credit via General Examinations of the College Level Examination Program or CEEB Advanced Placement Program (See Program Flexibility in Chapter 2);
4. Transfer credit for courses evaluated as equivalent to General Studies courses or approved substitute courses; and
5. Completion of departmental courses listed as substitutions for General Studies courses. (See List of Approved Substitutions below.)

General Studies courses are offered at the 100, 200, and 300 levels. Few of these courses have specific prerequisites, and a student may enter a given level when he determines his readiness. Academic advisers can provide the student with appropriate information about individual General Studies courses in order to assist the student in his selection.

Beginning students are not restricted to enrolling in only General Studies courses; the student who has selected his major is assisted in determining the

proper courses to take by consulting curriculum guides which he may obtain from his academic adviser.

List of Approved Substitutions

The departmental courses which have been approved as substitutions for General Studies courses are listed below. In no case does the departmental course substitute for more credit hours than the credit hours allowed in the comparable General Studies course.

<i>General Studies Course</i>	<i>Approved Substitutes</i>
GSA 101-3	One of: Physics 203, 204, 205, 253, 254, 255, or 3 semester hours of technical physics. (The substitution of Physics 253, 254, or 255 is limited to one semester hour.)
GSA 106-3	Chemistry 224
GSA 106-3 and 107-1	One of: Chemistry 140, 222, or 4 semester hours of technical chemistry
GSA 107-1	Chemistry 225
GSA 110-3	Geology 220
GSA 115-3	One of: Biology 306, 308, 309; Botany 200; Zoology 118
GSA 202-3	One of: Physics 203b, 204b, or 205b
GSA 208-1 and 209-3	Military credit for physiology
GSA 240-3	Biology 307
GSA 314-2	Biology 305
GSA 330-3	Military credit for meteorology
GSA unassigned-1 to 6	One to 6 semester hours from President's Scholars 251a and/or 351a
GSB 103-3	Geography 300
GSB 202-3	Psychology 320
GSB 211-3	One of: Agricultural Industries 204; Economics 214, 215
GSB unassigned-1 to 6	One to 6 semester hours from President's Scholars 215b and/or 351b
GSC 100-2	Music 101 or 102
GSC 101-3	Art 100
GSC 204-3	Art 207
GSC 206-3	Music 105a
GSC 209-3	English 209
GSC Foreign Language-4	Foreign Language
(Note: A student who has completed at least one full year of one foreign language can substitute a maximum of 4 semester hours counting as one discipline — foreign language — toward the Area C requirement.)	
GSC unassigned-1 to 6	One to 6 semester hours from President's Scholars 251c and/or 351c
GSD 101-3	Linguistics 101
GSD 107-4	One of: Mathematics 110, 111, 116, 117, 139, 140, 150, 151, 159, 250, 259, 282, or 4 semester hours of technical mathematics
GSD 117-2	Linguistics 102
GSD 118-2	One of: Administrative Sciences 302, Linguistics 103, or 2 semester hours of technical writing

GSE 104-4	Four semester hours from: Physical Education for Men 170, 200, 201
GSE 114-4	Four semester hours from Physical Education for Women 115
GSE unassigned-1 to 4	One to 4 semester hours from President's Scholars 251e and/or 351e

A maximum of 15 semester hours of comparable technical coursework can be substituted for General Studies requirements. Some of these substitutions are listed above; others may be possible on individual request to the Dean of General Studies.

Flexibility and Other Features

The University believes in a strong, well rounded general education program but does not accept the idea that every student must take the same courses or program in meeting the objective. Therefore, considerable latitude is permitted the student in meeting the objectives; alternate routes are provided within the General Studies framework.

Accommodations to differences in student background, interest, and aspirations include:

1. Substitutions of approved departmental courses can be made for General Studies courses as previously outlined;
2. Proficiency examinations are offered regularly for some General Studies courses; students have the opportunity to complete these exams during the initial registration period; and
3. A University Studies Program (See Chapter 4) allows the student to design a broad undergraduate education.

Other features include:

1. A Developmental Skills Program for disadvantaged students or under-achievers serves students specially admitted as participants and provides tutoring for many other students;
2. Remedial mathematics (non-credit) exists for students with insufficient mathematics training in high school;
3. A Writing Clinic staffed by Department of English personnel provides assistance to students who need individual help in English composition;
4. A Learning Resources Center is both an acceleration and an enrichment; students may review or prepare for proficiency examinations, make up work missed, or sharpen their skills through self-study;
5. President's Scholars sections of General Studies courses are offered for the honors student who is a President's Scholar.

The Transfer Student and General Studies. A transfer student who expects to graduate from Southern Illinois University at Carbondale with a baccalaureate degree must meet the General Studies requirements as outlined previously. He should experience little difficulty in doing so.

A student who graduates with an associate degree in a baccalaureate-oriented program from a Class I Illinois two-year institution, or one regionally accredited, will be considered as having met all General Studies requirements.

Additional information concerning admission of a transfer student and the evaluation of transfer credit can be found in the sections of this catalog pertaining to those specific subjects.

ACADEMIC UNITS AND PROGRAMS OFFERED

School of Agriculture

The School of Agriculture offers the following majors leading to the Bachelor of Science degree.

Agricultural Education	Animal Industries
Agricultural Industries	Forestry
Agriculture, General	Plant and Soil Science

It is recommended that high school students who are planning to pursue one of the above majors include the following in their high school programs: four units of English, two to four units of mathematics (algebra, geometry, advanced mathematics); two to three units of science (biology, chemistry, physics); and two to three units of social studies. Remaining units might well include agriculture.

For transfer students wishing to pursue a major in one of the agricultural or forestry areas, courses taken prior to entering Southern Illinois University at Carbondale should include a distribution in the physical and biological sciences, social sciences, and humanities. In addition a course in speech and appropriate sequences in English composition and college algebra should be included. A potential transfer student who has already identified the major which he expects to pursue for the bachelor's degree may select with greater precision the courses which will be transferred by consulting the curriculum for that major in Chapter 4.

A student planning to take preprofessional courses in veterinary science should register in the School of Agriculture's four-year curriculum in animal industries.

The School of Agriculture has no school-wide requirements other than the University requirements.

College of Business and Administration

The College of Business and Administration offers the following majors leading to the Bachelor of Science degree.

Accounting	Finance
Administrative Sciences	Marketing
Business Economics	

Any student, whose personal and professional goals cannot be met by any of the majors listed above, may design a special major in accordance with the University guidelines which are fully described in Chapter 4 of this catalog.

Minors are not offered. However, academic advisers of the college will assist and counsel those students enrolled in other units of the University having an interest in electing business courses.

All programs offered in the College of Business and Administration are accredited by the American Assembly of Collegiate Schools of Business.

Pre-College Preparation. High School and preparatory school students are urged to follow a program which includes at least three units of both English and mathematics, with a substantial portion of the remainder of their study programs devoted to such academic subject areas as humanities, the sciences, and social studies.

Transferred Credits in Business Courses. Subject to the University’s policies regarding acceptance of transferred credits, the college accepts college-level credit earned in business and economics courses from accredited two- or four-level institutions of higher education and counts such credit toward the 120 semester hours required for graduation. However, if such courses are offered at the lower division (freshman and sophomore) level at the institution where completed, only those courses shown below will be treated as equivalencies to college- or department-required courses.

<i>Subject</i>	<i>Hours</i>
Principles of accounting	6
Cost accounting	3
Economic principles	6
Business economics statistics (where college algebra is a prerequisite)	3
Basic computer course ¹	3

¹ Computer coursework completed at other universities and colleges will be accepted as transfer credit for the College of Business and Administration core computer requirement if that course is designed to teach one and only one of the following languages: Fortran, Basic, Cobal, RPG, PL1, and Algol; courses that survey numerous languages are not acceptable. Further, coursework with emphasis on unit record or data processing equipment will not be considered equivalent to the college’s computing requirement. Acceptable coursework should have a one-language base and present the student with advanced programming concepts, e.g., loops, arrays, etc.

Additionally, three semester hours of introduction to business and three semester hours of business law (contracts and agency) completed at the lower division level are acceptable in satisfaction of department requirements, in those programs where these courses are required.

Students also have the opportunity of validating additional course work and nothing in the above statement abridges a student’s right to satisfy graduation requirements by proficiency (or competency) examinations. Such examinations are treated as a student right by the college and are available for all courses.

Grade Point Average Requirement. Graduation from the College of Business and Administration requires achievement of a 2.000 grade point average in business-prefix (ACCT, ADSC, ECON, FIN, MKTG) courses offered at Southern Illinois University at Carbondale. Accounting majors are subject to the additional requirement of achieving a 2.000 grade point average in accounting-prefix courses completed at Southern Illinois University at Carbondale.

Pass/Fail Policy of the College. Business majors may not register on a Pass/Fail basis for business-prefix (ACCT, ADSC, ECON, FIN, and MKTG) courses used to satisfy requirements of the professional business core.

Course Sequencing. It is of the utmost importance that required courses be sequenced properly. Sequencing guides are available from the college’s academic advisement center and are published in the College of Business and Administration’s *Student Information Manual*. Courses on the 300 and 400 levels are reserved for juniors and seniors.

Forty Percent Rule. At least 40% of the course work of business majors must be devoted to courses offered outside the College of Business and Administration; at least 40%, to courses offered by the College of Business and Administration.

Multiple Majors in Business. Business majors may choose to complete two or more of the five majors offered by the college. While all requirements of each major must be satisfied, this can usually be accomplished through judicious use of electives without extending anticipated graduation dates beyond one semester. All majors will be noted on the diploma issued on completion of the Bachelor of Science degree.

Special Majors. Students with special interests or needs which cannot be met by any of the majors offered by the college may participate in designing their own programs under the special major program. Such programs must be coherent and unified and have as a sponsor a member of the teaching faculty of the college. All Southern Illinois University at Carbondale and college requirements must be met.

General Studies Courses Prescribed for Business Majors

- Area A: None
 - Area B: GSB 202 and Economics 214 (an approved General Studies substitute)
 - Area C: None
 - Area D: Mathematics 139 or 116 (approved General Studies substitutes) and GSD 153. (Administrative Sciences 302, an approved substitute in Area D, may be substituted for GSD 118.)
 - Area E: None
- These hours count toward partial fulfillment of General Studies requirements of 45 semester hours.

Professional Business Core. The professional business core, required of all College of Business and Administration students, is comprised of the following courses:

<i>Courses</i>	<i>Semester Hours</i>
Accounting 221, 222	6
Administrative Sciences 208, 304, 318, 481	13
Computer Science 202	3
Economics 215	3
Finance 320, 370 ¹	6
Marketing 304, 305	6
Mathematics 140 or 117 ²	4
Business-prefix (ACCT, ADSC, ECON, FIN, OR MKTG) courses outside the major	6
Total	47

¹ The combination of Finance 271 and 372 may be substituted for 370.
² Mathematics 150 may be substituted for 140 or 117.

College of Communications and Fine Arts

The College of Communications and Fine Arts offers the following majors leading to the Bachelor of Science degree:

- | | |
|------------------------|--------------------------------|
| Journalism | Speech |
| Cinema and Photography | Speech Pathology and Audiology |
| Radio-Television | Theater |

A student with special personal and professional goals, which cannot be met by one of these traditional majors, is encouraged to design his own special major. The requirements for the various majors and for special majors are listed in the next chapter.

In the communications fields listed above a *C* average in GSD 101 or an approved equivalent is required.

The Bachelor of Arts degree is offered for a major in the School of Art. The Bachelor of Music degree is offered for a major in the School of Music.

There are specific requirements for admission to the major in the School of Art. Students considering enrolling in the school should make appointments with the chief academic adviser to determine eligibility for the studio and studio crafts specializations for the designated major.

College of Education

The College of Education offers the following programs¹ leading to the Bachelor of Science degree:

Agricultural Education	Latin (Classical Studies)
Art	Mathematics
Biological Sciences	Music
Botany	Occupational Education
Business Teacher Education	Physical Education for Men
Chemistry	Physical Education for Women
Early Childhood Education	Physics
Economics	Political Science
Elementary Education	Recreation
English	Russian
French	Secondary Education ²
General Science	Social Studies
Geography	Spanish
German	Special Education
Health Education	Speech
History	Speech Pathology and Audiology
Home Economics Education	Zoology
Language Arts and Social Studies	

¹In addition to programs offered almost entirely within the College of Education, certain programs are offered in cooperation with the College of Liberal Arts (e.g., mathematics, economics) or with the College of Communications and Fine Arts (e.g., art, music), School of Agriculture (agricultural education), and the College of Science (e.g., biological sciences, chemistry).

²This is not an academic major. Persons planning to teach in secondary schools should refer to the secondary education section of this catalog for a listing of academic majors and minors.

The College of Education also grants the Bachelor of Music Education degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Administration and Foundations. The department's major emphasis is on graduate work, but it also participates in providing background for elementary and high school teachers. Likewise, students wishing to pursue a career in teaching or administration in colleges and universities take graduate work in the Department of Higher Education. The department does not offer an undergraduate major in higher education, but it provides courses for undergraduate credit providing a broad background in higher education for elementary and high school teachers.

Teacher Education Program

Southern Illinois University at Carbondale is fully accredited by the National Council for Accreditation in Teacher Education (NCATE) and by the State Teacher Certification Board, Springfield. The teacher education program is an all-university function administered by the dean of the College of Education. A teacher education council composed of faculty and students serves in an advisory capacity to the dean.

Teacher education programs, approved by the State Teacher Certification Board, are offered in elementary education, early childhood education, early childhood-preschool education, special education, and in secondary education majors and minors. The special education major offers specializations in education of the behaviorally disordered, education of the mentally retarded, and education of the learning disabled.

Only those students who complete an approved teacher education program are recommended for certification and may receive a teaching certificate through the entitlement process. Further information and procedures for receiving the certificate are explained below under Certification.

ADMISSION TO THE TEACHER EDUCATION PROGRAM

A student may apply for admission to the teacher education program with a minimum of 30 semester hours of completed work and successful completion of Education 201. Students are encouraged to investigate the feasibility of applying for a particular teaching field early in their careers by contacting their advisers or the department in which they wish to major. Application to the teacher education program does not insure admission because quotas have been established for each teaching field due to overcrowding in some areas.

A formal application for admission to the teacher education program must be submitted in person (no applications which are received through the mail will be considered) and must be accompanied by the applicant's most recent grade report. The application forms are available from the office of student personnel services in room 108 of the Wham Education Building and must be approved by that office and the department which offers the desired teaching specialty. If the applicant has an overall grade point average of 2.15 (4.00 scale) or better and is approved by the coordinator of student personnel services after an interview, the applicant will be placed in a pending status for the remainder of that semester. This status permits the student to begin work in the basic professional education courses. At the end of the semester, an applicant may remain in a pending status or may be placed in either provisional or unconditional status. Provisional or unconditional status is conferred by the department offering the teaching specialty and by the coordinator of student personnel services. A student who is not approved for provisional or unconditional status may continue one additional semester in a pending status. If at the end of the second semester, he fails to be recommended for provisional or unconditional status, he may not continue in the teacher education program and will receive advice concerning alternative degree programs available. In any case, each applicant will be notified of his current status by being issued a card with the status specified.

DEGREE REQUIREMENTS

In addition to general studies and major requirements, each degree candidate in a teacher education program must complete the course requirements listed below:

1. Four semester hours in health and physical education by taking GSE 201 and two hours of GSE 110-114. These courses should be selected as a part of the general studies requirements.

2. A course in American history or government.
3. The United States and State of Illinois constitution examinations requirement. This requirement for continuing certification in Illinois may be met by taking GSB 212 or 300; by taking a course in American history or political science other than GSB 212 or 300 and passing the constitution test administered by the Student Affairs Research and Evaluation Center; or by presenting written notification from another institution that a course in American history or government has been passed and that the tests have been passed on the constitutions of the United States and the State of Illinois.
4. GSB 202 as a prerequisite for Education 301 in the professional education sequence. GSB 202 should be selected as a part of the general studies requirements.
5. GSD 101 and GSD 117, 118, or 119, and one additional English course (GSD or English department) with a grade of *C* or better in each of the last two courses completed. This requirement is a prerequisite to admission to the professional semester.
6. The professional education sequence listed below. Each of the courses which are part of the program prior to the professional semester must be completed with a grade of *C* or better as a prerequisite to admission to the professional semester. Education 201 must be completed prior to admission to the teacher education program.

Professional Education Sequence	24
Decision Component	
Education 201	1
Basic Professional Block	
Education 301	2
Education 302	2
Education 303	2
Education 304A, B, C, D, E, or F	2
Professional Semester ¹	
Education 350	3
Education 400	4
Education 401	8

7. Illinois State Teacher Certification Board general education course distributions in: language arts, science, mathematics, social science, humanities, health, and physical education. Students having questions concerning whether their programs meet certification board requirements should discuss their concerns with their academic advisers.

¹ Concurrent registration in Education 350, 400, and 401 is required during the professional semester.

Certification

When the student is nearing completion of his teacher education program (usually during the last semester), he can obtain the forms to make application for entitlement to certification for the State of Illinois from the dean's office of the College of Education, Wham Education Building, Room 115. Upon completion of the application forms by the student and payment of the certification board fee, the dean's office staff will process the forms with the State Teacher Certification Board and entitlement cards will be sent to the dean's office. When the student's program, including graduation clearance, is completed, the office will mail the cards to the student's permanent address for his use in applying for certification through his future educational service region superintendent.

The State of Illinois issues through the entitlement process the Standard Elementary Certificate, Standard High School Certificate, Standard Special

Certificate, or Early Childhood-Preschool Certificate to students who graduate from an approved teacher education program at Southern Illinois University at Carbondale.

Standard Elementary Certificate. Students planning to teach on the early childhood level or the elementary level in the public schools of Illinois register in the College of Education. Requirements for entitlement to the State of Illinois standard elementary certificate may be through the completion of the early childhood education program or the elementary education program. For further information concerning these programs, see the section of this catalog titled elementary education and professional education experiences in Chapter 4.

Standard High School Certificate. Requirements for entitlement to the State of Illinois standard high school certificate and for entitlement to the standard special certificate may be met as explained in the section of this catalog titled secondary education in Chapter 4. A listing of majors, minors, and other programs approved for certification entitlement purposes at Southern Illinois University at Carbondale is presented there. It is possible for a student to be registered in one of the colleges or schools other than the College of Education and to meet the state requirements for the standard high school certificate or the standard special certificate by using as electives certain prescribed professional education requirements in the College of Education.

Standard Special Certificate. Teaching all grades, kindergarten through grade 12, requires the standard special certificate. As noted above, requirements for entitlement to the standard special certificate may be met in the manner outlined in the section of this catalog titled secondary education in Chapter 4. Teaching fields for which the standard special certificate is issued include physical education for men, physical education for women, special education, music, art, and speech pathology and audiology.

Early Childhood-Preschool Certificate. Students planning to teach at the pre-school level in public schools or other settings in Illinois register in the College of Education or in the College of Human Resources. The early childhood-preschool program was specifically designed to prepare future teachers of pre-kindergarten children. For further information concerning the program, see the section of the catalog titled elementary education in Chapter 4.

Student Teaching

Student teaching experiences are offered through the Department of Professional Education Experiences. Refer to the section of this catalog titled Professional Education Experiences for information concerning specific requirements for professional education experiences including student teaching experiences.

School of Engineering and Technology

The School of Engineering and Technology offers the following majors leading to the Bachelor of Science degree.

Engineering

Industrial Technology

Engineering Technology

Specific requirements are listed for the various majors offered by the school in the next chapter.

The application of transfer credit from senior institutions to program requirements in the School of Engineering and Technology must be approved by the dean or his designated representative.

College of Human Resources

The College of Human Resources offers the following majors leading to the Bachelor of Science degree:

Administration of Justice	Food and Nutrition
Child and Family	Interior Design
Clothing and Textiles	Social Welfare
Family Economics and Management	

It also offers a major leading to the Bachelor of Arts degree in design.

The specific requirements for each of these majors are listed in the next chapter.

Minors are offered in black American studies and in community development. One is also offered in consumer studies in the Department of Family Economics and Management.

College of Liberal Arts

The College of Liberal Arts offers the following majors leading to the Bachelor of Arts and Bachelor of Science degrees. Minors are possible in most of these areas. For exceptions, see next chapter.

African Studies ¹	Greek ¹	Inter-American Studies
Anthropology	Classical Studies	Linguistics
Asian Studies ¹	East Asian Civilizations ¹	Mathematics
Comparative Literature ¹	French	Music ²
Computer Science	German	Philosophy
Earth Science ¹	Japanese ¹	Political Science
Economics	Latin ¹	Psychology
English	Russian	Religious Studies
Foreign Languages	Spanish	Sociology
and Literatures	Geography	Speech ²
Chinese ¹	History	Theater ²
		Uncommon Languages ¹

¹Minor only.
²Liberal arts major, not professional major.

College Requirements Effective Fall, 1974

Students graduating from Southern Illinois University at Carbondale after September, 1974, should satisfy the following requirements to receive a degree from the College of Liberal Arts:

1. University requirements including those relating to General Studies, residency, total hours, and grade point average.
2. Successful completion of requirements in an approved major in the College of Liberal Arts.
3. At least 40 hours of course work at the 300- or 400-level.
4. One of the following options:
 - a. A minor. The minor shall be taken in a department in the College of Liberal Arts unless the student has permission to do otherwise from the dean

of the college. Requirements for the minor shall be set by the department offering the minor but may not involve less than 15 semester hours.

OR

b. At least 15 semester hours work in the two areas of the college outside the one in which the student has his major. The student shall complete at least 6 hours in each area. General Studies courses may not be used to satisfy this option except with prior approval of the dean of the college. For the purposes of requirement 4.b the college is divided into the following areas:

Humanities: English, history, linguistics, philosophy, religious studies

Social Sciences: anthropology, economics, geography, political science, psychology, sociology

Mathematical Sciences/Foreign Languages and Literatures: computer science, mathematics, foreign languages and literatures.

Students should consult with an adviser at an early stage in their college career regarding any problems related to these requirements. With an adviser's help, students should design an academic program which will be personally satisfying, increase their skills, and be the best preparation for a career. Similarly, those planning to attend schools of law, health related fields, or other professions must plan their curriculum carefully, with courses of depth and rigor, and should be in close contact with their advisers at frequent intervals.

College of Science

The College of Science offers majors, and in most cases minors, leading to the Bachelor of Arts and Bachelor of Science degrees in the following fields of study:

Biological Sciences	Mathematics
Botany	Microbiology
Chemistry	Physics
Engineering Biophysics	Physiology
Geology	Zoology

A minor in earth science is also offered.

Each department has specific requirements for students to major in the selected field of interest, but the College of Science has some minimum general requirements listed below.

ACADEMIC REQUIREMENTS

1. *Biological Sciences*. Six semester hours in courses offered by the biological sciences departments in the college, with the proviso that this requirement cannot be satisfied in whole or in part by General Studies courses, but may be substituted for the latter in meeting the General Studies requirements.

2. *Communications*. Seven hours of which three semester hours must be in English composition, two semester hours in speech, and two semester hours in a writing course.

3. *Foreign Language*. The foreign language requirement can be met by one of the following: (a) passing an 8-hour 100-level sequence in one language; (b) completing two years in one language in high school with no grade lower than C and achieving a satisfactory score on a standardized test in that language; or (c) completing three years of one language in high school with no grade lower than C. Tests administered during advisement of new students will determine whether proficiency credit is allowable.

A student whose native language is not English may use the native language to satisfy part or all of the science foreign language requirement at Southern Illinois University at Carbondale. If the language is presently taught at Southern Illinois University at Carbondale, academic credit may be earned. If the language is not presently taught at Southern Illinois University at Carbondale, no credit is given, but partial or full satisfaction of the science foreign language requirement may be granted if the student's major department so recommends. A student whose native language is English but who has learned another language not taught at Southern Illinois University at Carbondale may qualify without credit for partial or full satisfaction of the science foreign language requirement under certain circumstances, including formal recommendation by the student's major department and availability of an examiner and examination materials within the Department of Foreign Languages and Literatures. For information, the student should consult either the College of Science advisement center or the proficiency examination coordinator of the Department of Foreign Languages and Literatures.

4. *Mathematics*. The mathematics requirement can be met by (a) passing Mathematics 110a, b (3,2) or Mathematics 111 (5) or its equivalent or (b) completing three years of high school mathematics with no grade lower than C and achieving a satisfactory score on the University's Mathematics Placement Test.

5. *Physical Sciences*. Six semester hours in courses offered by the physical science departments of the college, with the proviso that this requirement cannot be satisfied in whole or in part by General Studies courses, but may be substituted for the latter in meeting the General Studies Requirements.

6. *General Requirements*. At least 40 hours of the student's 120 hours for graduation must be at the 300- or 400-level. For transfer students submitting only the last year in residence, at least 24 of these must be at the 300- or 400-level.

PREPROFESSIONAL COURSES

A student planning a professional career in any of the following fields should register in the College of Science immediately or after completing the General Studies requirements of the University: dentistry, medical technology, medicine, nursing, occupational therapy, pharmacy, physical therapy, public health, veterinary science.

School of Technical Careers

The School of Technical Careers is a unit unique to Southern Illinois University at Carbondale among institutions of higher learning. It was created in 1973 to offer a bold new Bachelor of Science degree program tailored for occupationally-oriented students and to assume responsibility for associate degree preprofessional and technical programs formerly conducted by the Vocational-Technical Institute.

On the baccalaureate level, the School of Technical Careers has only one Bachelor of Science program, but requirements for that program are as varied as the number of students enrolled because each has his own individually tailored course of study. Each student must meet University requirements, but within that framework he is free to build, in consultation with his advisers, a program that suits exactly his own particular career goals.

Currently, the School of Technical Careers offers 20 majors leading to the Associate in Art or Associate in Applied Science degrees. These are:

Allied Health Career	Dental Hygiene
Specialties	Dental Laboratory Technology
Architectural Technology	Electronic Data Processing
Automotive Technology	Electronics Technology
Aviation Technology	Law Enforcement
Avionics Technology	Media Technology (Library Assistant)
Commercial Graphics—Design	Mortuary Science and Funeral Service
Commercial Graphics—Production	Nursing
Construction Technology—Building	Physical Therapist Assistant
Construction Technology—Civil	Secretarial and Office Specialties
Correctional Services	Tool and Manufacturing Technology
	(Numerical Control)

A number of these majors offer third year post-associate specializations to provide the student with additional competencies required for licensure.

Requirements for associate degree programs are listed in Chapter 4 of the Undergraduate Catalog.

Requirements for the baccalaureate program also are discussed in Chapter 4, but since these differ completely among individual students, persons interested should contact the baccalaureate degree adviser in the School of Technical Careers.

4 Undergraduate Curricula and Courses

The undergraduate fields of study offered by Southern Illinois University at Carbondale follow in alphabetical order rather than by college or school. Unless otherwise noted, the curriculum in each field listed below leads to a bachelor's degree. Associate degree curricula are marked with an asterisk.

Accounting	Consumer Studies ^{1,4}
Administration of Justice	Correctional Services*
Administrative Sciences	Dance ^{1,5}
African Studies ¹	Dental Hygiene*
Agricultural Education	Dental Laboratory Technology*
Agricultural Industries	Design
Agriculture, General	Early Childhood Education
Allied Health Career Specialties*	Earth Science ¹
Animal Industries	East Asian Civilizations ^{1,3}
Anthropology	Economics
Architectural Technology*	Electronics Data Processing*
Art	Electronics Technology*
Asian Studies ^{1,6}	Elementary Education
Automotive Technology*	Engineering
Aviation Technology*	Engineering Biophysics
Avionics Technology*	Engineering Technology
Biological Sciences	English
Black American Studies ^{1,6}	Family Economics and Management
Botany	Finance
Business Economics	Food and Nutrition
Business Teacher Education	Forestry
Chemistry	French ³
Child and Family	General Science
Chinese ^{1,3}	Geography
Cinema and Photography	Geology
Classical Studies ³	German ³
Clothing and Textiles	Greek ^{1,3}
Commercial Graphics—Design*	Health Education
Commercial Graphics—Production*	History
Community Development ¹	Home Economics Education
Comparative Literature ^{1,6}	Industrial Technology
Computer Science	Instructional Materials ¹
Construction Technology—Building*	Interior Design
Construction Technology—Civil*	Japanese ^{1,3}

Journalism	Secretarial and Office Specialties*
Language Arts and Social Studies	Social Studies
Latin ^{1,3}	Social Welfare
Latin-American Studies	Sociology
Law Enforcement*	Spanish ³
Linguistics	Special Major
Marketing	Special Education
Mathematics	Speech
Media Technology (Library Assistant)*	Speech Pathology and Audiology ²
Microbiology	Technical Careers
Mortuary Science and Funeral Services*	Theater
Music	Tool and Manufacturing Technology
Nursing*	(Numerical Control)*
Occupational Education	Uncommon Languages ^{1,2}
Philosophy	Zoology
Physical Education for Men	<i>Preprofessional Programs</i>
Physical Education for Women	Dentistry
Physical Therapist Assistant*	Law
Physics	Medical Technology
Physiology	Medicine
Plant and Soil Science	Nursing
Political Science	Occupational Therapy
Psychology	Pharmacy
Radio-Television	Physical Therapy
Recreation	Public Health
Religious Studies	Theology
Russian ³	Veterinary Science

¹Minor only

²Described under Linguistics

³Described under Foreign Languages and Literatures

⁴Described Under Family Economics and Management

⁵Described under Physical Education for Women

⁶A special major may be developed in this field of study.

*Associate degree curriculum

Abbreviations Used in this Chapter

Specific courses are identified by three-digit numerals plus, in some cases, a single letter. The first numeral of the three indicates the level of that course. A letter following the three numerals may indicate a *part* of a course (where *a* means first part, *b* means second part, etc.) or may identify the topics or subject areas specified in courses such as readings or special problems. A numeral or numerals separated from the identification number by a dash indicates the number of hours of credit received in the course. For example, Mathematics 110-5 (3,2) indicates a first-level, two-part course of 5 hours in the Department of Mathematics. The two parts of the course may be referred to as Mathematics 110a, b.

The five areas of General Studies are referred to as GSA, GSB, GSC, GSD, and GSE. The three-digit numerals following these abbreviations function similarly to those noted above.

In the areas of this chapter which describe course requirements for programs, numerals in parentheses in columns of figures pertain to semester hours which satisfy more than one requirement. They are in parentheses to avoid their being added into the total of the column, which would be a

duplication of hours required. For example, under food and nutrition, GSA 115 and 209 satisfy part of the General Studies requirements and contribute 6 hours toward the 45 hours required. The 6 hours is also required for the major in food and nutrition, but does not contribute to the printed total of 53-54 hours.

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites. If a course is a part of the undergraduate pass/fail system, it is so indicated by the term "Elective Pass/Fail" or "Mandatory Pass/Fail."

Not all of the courses described here are offered every semester or even every year. To determine when and where a course is to be offered, consult the schedule of classes obtainable from University Graphics, Southern Illinois University at Carbondale, Illinois 62901. When requesting a schedule, please specify *semester*.

Course Descriptions

The first entry for each course is a three digit numeral plus, in some cases, a single letter which together with the subject area, serves to identify the course. The first digit indicates that the course is for freshmen, sophomores, juniors, seniors, and graduate students only, depending on whether the digit is 1,2,3,4, or 5 respectively. If the first digit is 0, the course is not properly in the above categories.

Following the identification number are a dash and another number, which indicates credit allowed for the course. The maximum credit may be variable, such as Accounting 390-1 to 4. Variable credit courses which have a number of credit hours per semester or per topic which is limited, have those limits in parentheses following the total maximum hours of credit. An example of such a course is Administration of Justice 492-2 to 6 (2 to 3 per semester). Where courses are formally divided into parts, such as History 330-6 (3,3), the two or more numerals separated by commas in parentheses indicate the credit allowed for each part of the course.

General Studies Courses

MAN'S PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GSA) Courses

101-3 Conceptual Insights Into Modern Communication Systems: From Hi-Fi Sound to Laser Beams. The basic laws of nature will be presented in order to understand the functioning of modern communications such as high fidelity sound, televisions, satellites, and laser beams. Strong emphasis on consumer education in the field of home entertainment will be developed in both the lectures and labs.

106-3 Chemistry for Non-Science Majors. Selected discussions of inorganic, organic and biological chemistry and their relationship to our standard of living and quality of our health and environment. Three lectures with one voluntary help session per week.

107-1 Chemistry Laboratory for Non-Science Majors. Techniques of preparation, purification, measurement, and study of elements and compounds that are important in modern living. One three-hour laboratory per week.

110-3 Earth Science. Earth and its major domains with Earth's substances and processes emphasized. Lecture, laboratory. Laboratory manual \$3.00. Elective Pass/Fail.

115-3 Biology. For students with a weak biology background or for students who are non-biology majors but have an interest in gaining general knowledge of man's biological inheritance. An introduction to the evolutionary development of man's physical and biological environment, to the biological problems and processes of a model living organism, and to the role of biological research in the world of the future. Lecture-laboratory. Laboratory manual \$4. Elective Pass/Fail.

125-3 Systems Nature of Man's World. (Same as GSB 125.) Introduction to the elements of the systems view of the world. The impact of the systems reality on modern man's life and its simplifying power in science will be stressed.

202-3 Space Science—Astronomy. The solar system, our galaxy, and the universe beyond. Fundamental concepts of the physical sciences as applied in astronomy to our space environment. Lectures will be supplemented by demonstrations and by occasional hours of individual or supervised astronomical observations. Not open to students who have had Physics 302 or GSA 102B. Purchase of exercise sheets under \$1.00. Elective Pass/Fail.

208-1 Laboratory Experiences in Physiology. Laboratory course to be taken concurrently with GSA 209. Provides experiences with small animal experimentation and measurements made on the human subject. One two-hour laboratory per week. Prerequisite: concurrent enrollment in GSA 209.

209-3 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the living body, with emphasis on human physiology. Three lecture hours per week. Prerequisite: a background in biological science recommended. Elective Pass/Fail.

220-3 Survival of Man. (Same as GSB 220.) Topics discussed include the interrelated technological and sociological aspects of the environmental problems concerned with population, food, ecology, water and solid waste. Emphasis is placed on understanding the total context in which environmental problems must be considered. GSA/B 220 and GSA/B/C 221 may be taken independently; if both 220 and 221 are taken, only three hours may be counted in a given area of General Studies, but three hours may be counted for the three additional hours required for areas A, B, and/or C.

221-3 Survival of Man. (Same as GSB 221 and GSC 221.) Topics discussed include the interrelated ethnological, technological, sociological, moral and ethical aspects of the environmental problems concerned with technology, air pollution, urbanization, natural resource utilization, agriculture and aesthetics. Emphasis is placed on understanding the total context in which environmental problems must be considered. GSA/B 220 and GSA/B/C 221 may be taken independently; if both 220 and 221 are taken, only three hours may be counted in a given area of General Studies, but three hours may be counted for the three additional hours required for areas A, B, and/or C.

230-3 Energy and the Future. Discussion of the importance of energy in present and future societies. Review of fundamental constraints on energy utilization including ecological effects. Analysis of energy conversion technology to meet future needs with future resources.

240-3 Ecology and Man. Fundamental biological and ecological processes important in the individual, population, and community life of organisms including man are discussed in the context of ecological systems. Lectures are supplemented by one hour of laboratory, field work, or other student options. Elective Pass/Fail.

302-3 Psychobiology. A survey of the role of biological processes in the behavior of humans and other species. Topics covered include structure and function of the nervous system, behavioral endocrinology, psychopharmacology, sensorimotor functions, sleep and waking, motivation, emotions, reinforcement, psychopathology, learning and memory.

303-3 Ferns, Trees, and Wild Flowers. Field identification and natural history of local plants. One lecture and four hours of field work per week.

312-3 Conservation of Natural Resources. A study of man's use and misuse of natural environment.

313-2 Evolution. Principles and processes of the evolution of living things including man.

314-2 Human Heredity. Principles of heredity as related to man, with emphasis on the effects of environment on his biological inheritance. Prerequisite: a background in biology is recommended.

322-3 Earth's Mineral Resources. Acquaints the nonprofessional with the origin, distribution, character, and value of the common minerals and rocks in the Earth's crust. Purchase of lab manual and student-financed field trips. Elective Pass/Fail.

330-3 Weather. Introduction to constituents and processes in the Earth's atmospheric environment; major atmospheric variables; major features, characteristics of the atmosphere; elemental principles of forecasting; meteorological causes of atmospheric pollution. Interaction of processes and variables to define climate for various regions of the world. Purchase of materials in the range of \$3.00. Elective Pass/Fail.

356-3 Creativity in Science and Technology. Evolution from need to knowledge, and from analysis to synthesis. The social dimension of science and its role in the advancement of humanity. Evolution of scientific thought and technology.

361-2 Acoustics of Music. A survey of the production, transmission, and reception of sounds with emphasis on musical sounds. Related areas include respiration and vocal production, the learning process, binaural and stereophonic sound, disc and tape and optical recording, sound reproduction systems, architectural acoustics (design, construc-

tion, and materials), acoustical laboratory equipment and research procedures, environmental sound pollution. No special training in music or science is required.

399a-12 Folk Arts, Crafts, and Uses of the Environment—Expressions of Living in the Southern Appalachian Region. (Same as GSB and GSC 399a.) A broad team-taught interdisciplinary learning experience designed to place students in direct contact with a unique region and its people in order to expand the student's capacity to make effective decisions in his society through the study of the functioning of a different society interacting with his environment. Summer only.

MAN'S SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GSB)

Courses

103-3 Geography of Man's Environment. Provides students with basic information on the nature and problems associated with the major environments of the world. The geographical distribution of climate and physiographic elements of world environments are described. The problems of economic development, environmental change, and the relation of man to the land in the major regions of the world are investigated. Purchase of materials in the range of \$4.00.

104-3 Man and His World: Anthropology. The main ideas of the anthropological approach to the study of man. Anthropology's relevance to the student in today's world shown through examples drawn from the subject matter of the field.

105-3 The Contemporary World. An examination of the fundamental problems of the contemporary era as seen in historical perspective. No credit toward the major in history. Purchase of books and materials in the range of \$7.00. Elective Pass/Fail.

109-3 Introduction to Black America. (Same as GSC 109.) A survey course designed to expose the student to various aspects of the Black experience. Aspects included are history, literature, theology, the arts, etc. The textbook is a collection of essays designed for use especially in this course and is supplemented by guest lecturers and audiovisual materials.

112-3 Comparative Economic Systems. Introductory analysis of capitalism, socialism, communism as social systems. Each system is examined in terms of its economic, political and social organization. Elective Pass/Fail.

160-2 Mass Communication in Society. Acquaints non-journalism students with the interrelationships between the mass media and other aspects of American society, examines the operation and potential development of the mass media, as well as the important roles of the mass media in our society.

202-3 Introduction to Psychology. An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus (about \$3.00 to \$3.50).

203-4 The Sociological Perspective. An examination of the variables related to the acquisition of human behavior and interaction in social institutions. Elective Pass/Fail.

206-3 Applied Child Development. An interdisciplinary study of the changes that take place in a child as he passes from birth to maturity. Purchase of book in the range of \$5.00.

207-3 Contemporary Political Ideologies. A survey of recent political ideologies: Nationalism, Socialism, Communism, Liberal Democracy, Conservatism, Christian Socialism, Fascism, Contemporary Liberation Movements. Optional purchase of paperbacks in the range of \$5.00. Elective Pass/Fail.

211-3 Contemporary Economics. A study of the basic economic problems confronting America and the world today. This course gives students a broad latitude in the structuring of topics to be discussed. Problems are discussed from the point of view of public policy as well as theory. Elective Pass/Fail.

212-4 Introduction to American Government and Politics. An introduction to American government including the cultural context, structure and functions of the national political system, and some attention to subnational politics. Optional purchase of paperbacks in the range of \$5.00. Elective Pass/Fail.

220-3 Survival of Man. (See GSA 220.)

221-3 Survival of Man. (See GSA 221.)

230-3 Emergent Societies and Alternative Life Styles. Familiarization with some of the anthropological literature pertaining to newly emergent social trends in a variety of cultures.

31-2 The American Educational Systems. A comprehensive study of the nature and purpose of education in the United States and of how our schools are organized, financed, and conducted.

250-3 Introduction to Comparative Government and Politics. A general introduction to the comparative study of political systems with focus on selected contemporary states. Optional purchase of paperbacks in the range of \$5.00. Elective Pass/Fail.

255-2 Regional Geography of the United States. A brief survey of historical, environmental, and economic factors affecting regionalization of the United States followed by discussion of regional resources, problems, and policy.

270-3 Introduction to International Relations. A study of world politics. The cause of international conflict and conditions of peace. Optional purchase of paperbacks in the range of \$5.00. Elective Pass/Fail.

299c-3 The Changing World of Work. An interdisciplinary course exploring future manpower requirements for a changing society. Special emphasis on society's needs, factors influencing the individual's job preference, and probable employment opportunities. Elective Pass/Fail.

299d-2 The High Price of Food. Understanding various forces or components affecting food prices; examination of how changes in these components affect quantity and quality of food; discussion of rational consumer action in matters pertaining to food prices. Elective Pass/Fail.

299e-3 Values, Systems, and Society. (Same as GSC 299e.) Values and ethics in evolutionary systems and cultural perspectives will be critically analyzed. A review of the basic problems of survival and further evolution of civilization.

300-3 Origins of Modern America, 1492-1877. A general survey of the political, social, and economic development of the United States from 1492 to 1877. Purchase of books and materials in the range of \$7.00. Elective Pass/Fail.

301-3 Modern America from 1877 to the Present. A general survey of the political, social, and economic development of the United States from 1877 to the present. Purchase of books and materials in the range of \$7.00. Elective Pass/Fail.

305-3 Personal Finance. An introduction to the problems of personal financial asset management, including income and expense budgeting. Emphasis also placed on consumer credit, insurance, investments, home ownership and taxation. Not open to students with majors in the College of Business and Administration. Elective Pass/Fail.

310-1 to 6 (1 per semester) Current Events. Contemporary events in the modern world and their treatment in the newspaper and periodical press. May not be counted toward the journalism major. May be repeated to a maximum of six hours, but only three hours may apply to GSB requirements.

311-3 Economic Development of Western Civilization. Emphasizes the underlying trends and forces that have led to the present economic structure of the developed world. The application of modern growth concepts to development of the Atlantic community. Elective Pass / Fail.

321-3 Socialization of the Individual. A study of the social process in which individual native capacities are shaped and developed through interaction with social groups from childhood to old age. Elective Pass / Fail.

325-3 Race and Minority Relations. An analytical study of the status of racial, ethnic, and religious minorities in the United States. Elective Pass / Fail.

330-3 Language and Behavior. An examination of the implications of language study for man's view of himself and his place in the world. Topics deal with the pervasiveness of language in various aspects of modern society. Elective Pass / Fail.

341-3 Marriage as a Social Institution. A sociological examination of interpersonal relationships in contemporary American dating, courtship, and marriage, with an historical and cross-cultural perspective. Elective Pass / Fail.

346-2 Consumer Choice and Behavior. Analysis and overview of consumer behavior, historical as well as present day, theories related to the choices.

378-3 Introduction to American Foreign Policy. An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad. Optional purchase of paperbacks in the range of \$5.00. Elective Pass / Fail.

399a-12 Folk Arts, Crafts, and Uses of the Environment—Expressions of Living in the Southern Appalachian Region. (See GSA 399a.)

MAN'S INSIGHTS AND APPRECIATIONS (GSC)

Courses

100-2 Music Understanding. The aural perception of musical sound events, relationships, and structures. Helps the student to become a more sensitive and perceptive listener. Listening assignments include a wide variety of styles and kinds of music. Not historically oriented. Elective Pass / Fail.

101-3 Introduction to Art. A basic introduction to the theory, meaning, and creation of visual art with emphasis upon interdisciplinary concerns. Two hours lecture and two hours studio per week. Possible incidental fee maximum \$5.00.

102-3 Problems in Philosophy. Introductory survey of some main philosophic problems concerning man, nature, society, and God, as discussed by major Western thinkers. Possible supplementary paperback expense not to exceed \$5. Elective Pass/Fail.

104-3 Moral Decision. Introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers of past and present. Not open to students who have had GSC 102. Elective Pass/Fail.

107-2 Man, Leisure, and Recreation. Introduction to the meaning, challenges, and problems of leisure. Analyzes leisure's relation to work, education, religion, recreation, and the totality of life. An attempt is made to help students develop insights, values, and attitudes for self-realization and individual fulfillment in his leisure pursuits.

109-3 Introduction to Black America. (See GSB 109.)

200-3 Oral Interpretation of Literature. Beginning study of the oral interpretation of literature: appreciation, analysis, performance. Emphasis is upon literature as human experience and upon the creative role of the reader as he engages the literary text. Incidental costs not to exceed \$2.00. Elective Pass / Fail.

201-3 Introduction to Drama. Students will read and discuss plays of different types and periods. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass / Fail.

202-3 Introduction to Poetry. Students will read and discuss poems of different types and periods. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass / Fail.

203-2 Drama and the Arts of the Theater. The study of drama as a literary type: the relationship with the theater audience, the role of the theater in Western culture and its relation to other creative arts.

204-3 Meaning in the Visual Arts. Designed to provide students a broad understanding of the history of art and its relation and implications to contemporary culture. Emphasis is placed on the relation of art to all disciplines, historical and contemporary.

205-3 Innovation for the Contemporary Environment. A variety of factors affecting creative individual and small group problem solving and its relevance to the contemporary environment are explored in theory and in practice. Purchase of book \$4.50. Elective Pass / Fail.

206-3 Music as a Creative Experience. Students experiment with various ways of creating musical sound structures, and engage in active, critical listening, as a means to a better understanding of the nature of musical experience. Not historically oriented. Elective Pass / Fail.

207-2 Aesthetics. The structure and importance of the beautiful in nature, society, personality, and the arts. Elective Pass / Fail.

208-3 Elementary Logic. Study of the basic forms of reasoning, with emphasis on the evaluation of arguments encountered in every-day life. Elective Pass / Fail.

209-3 Modern Literature: Form and Idea. A reading of representative selections from modern American, British, and Continental literature. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

210-3 Introduction to Fiction. Students will read and discuss a variety of American and European short stories and novels. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

211-2 Oriental Humanities: India. The literature, music, drama, visual art, and definitive cultural motifs of India. Elective Pass/Fail.

212-2 Oriental Humanities: China. The literature, music, drama, visual art, and definitive cultural motifs of China. Elective Pass/Fail.

213-2 Oriental Humanities: Japan. An introduction to the literature, music, drama, visual art, and definitive cultural motifs of Japan. Knowledge of Japanese language not required.

214-3 Oriental Philosophies. Examination of world outlooks and life outlooks of major Oriental philosophic traditions: Hinduism, Buddhism, Confucianism, and Taoism. Elective Pass/Fail.

216-3 Types of Eastern Religion. An introductory study of selected African and Eastern religious traditions, emphasizing their meanings for their respective participants, their socio-political contexts, and their contributions to the religious history of man. Not open to students who have had GSC 215. Elective Pass/Fail.

217-3 Types of Western Religion. Introductory study of the basic phenomena of religion among American Indians, the ancient Greeks, Jews, Christians, and Moslems, emphasizing socio-political-aesthetic contexts and contemporary relevance. Not open to students who have had GSC 215. Elective Pass/Fail.

221-3 Survival of Man. (See GSA 221.)

299e-3 Values, Systems and Society. (See GSB 299e.)

317-3 Recent American Literature. Reading and discussion of American literature

since the second World War. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

325-3 Black American Writers. Poetry, drama, and fiction by Black American writers. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

330-3 Classical Mythology. An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans. Elective Pass/Fail.

335-3 The Short Story. Reading and discussion of short stories by American and European authors. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

349-3 The Cinema. The cinema as a communicative and expressive medium. Study of film types illustrated by screenings of selected films. Not open to cinema and photography majors. Screening fee: \$5.00. Elective Pass/Fail.

363-3 Philosophy of Science. Analysis of alternative answers to questions about scientific method such as: How are scientific hypotheses discovered? How are they confirmed or falsified? What is a scientific explanation? Are explanation and prediction equivalent? What is determinism? What is a theory? Elective Pass/Fail.

365-3 Shakespeare. Reading and discussion of the major plays. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass-Fail.

371-2 Evolution of Jazz. Stylistic characteristics of jazz at various stages of its evolution. Societies and cultures from which it derived. Orientation is historical, sociological, and stylistic. Elective Pass/Fail.

390-3 Contemporary American Thought. Introductory survey of the main currents of contemporary philosophy in America and their relevance for legal, political, and educational developments. Elective Pass/Fail.

393-3 to 6. Studies in Literature. The subjects of this course vary from section to section and from semester to semester. Students should consult the schedule of classes to learn the specific topics for each section each semester. Prerequisite: GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

399a-12 Folk Arts, Crafts, and Uses of the Environment—Expressions of Living in the Southern Appalachian Region. (See GSA 399a.)

ORGANIZATION AND COMMUNICATION OF IDEAS (GSD)

Courses

101-3 English Composition. Basic principles of sentence structure, paragraphing, and organization. Purchase of handbook in the range of \$4.00 to \$5.00.

104-2 Grammar in Language. Description and explanation of the major grammatical structures and patterns of English and various other languages. Designed to give students a sense of universal grammatical concepts.

106-0 Elementary Algebra. For students with less than one year of high school algebra, this course serves as the prerequisite for the following courses: GSD 107, 112, 113, and Math 116.

107-4 Intermediate Algebra. Properties and operations of the number system. Elementary operations with polynomials and factoring. Elementary operations with algebraic fractions. Exponents, roots, and radicals. First and second degree equations and inequalities. Functions and graphing. Systems of equations and inequalities. Exponential and logarithmic functions. Prerequisite: one year of high school algebra or GSD 106.

110-2 Economic and Business Statistics. The use and general applicability of statistical techniques and thinking in modern life, with emphasis on business and economic applications, through understanding and using the basic elementary statistical methods. Credit cannot be received for both GSD 110 and GSD 112. Elective Pass/Fail.

112-2 Basic Concepts of Statistics. Illustrates basic concepts of statistical theory. Emphasis on concepts rather than computational techniques. Main topics include data reduction, probability sampling, statistical estimation and decision procedures. Credit cannot be received for both GSD 110 and GSD 112. Prerequisite: one year of high school algebra or GSD 106.

113-2 Introduction to Mathematics. The development of some basic concepts of mathematics and their significance for society. Prerequisite: one year of high school algebra or GSD 106.

117-2 Expository Writing. Practice in the writing of the composition, with emphasis on the logic of organization, demonstration, and expression. Purchase of handbook in the range of \$4.00 to \$5.00. Prerequisite: GSD 101 or equivalent.

118-2 Technical Report Writing. An introduction to technical writing with special emphasis on selection, arrangement, and presentation of data and on technical writing

199a-1 Library as an Information Source. Designed to expose undergraduate students to the basic concepts and structures of the library. This would enable the students to use their knowledge in completing reading and term paper assignments as well as in gaining confidence for independent work in the library.

Courses

104-(1 or 2 per activity) **Individual and Team Activity (P.E.-Men).** (a) Archery. (b) Badminton. Physical education equipment required.* (c) Basketball. Physical education equipment required.* (d) Bowling. Lane fee and shoe rental required. (e) Golf. Three golf balls required. Special sections require student transportation and green fees. (f) Soccer. Physical education equipment required.* (h) Tennis. Physical education equipment; tennis shoes and three tennis balls required. (i) Volleyball. Physical education equipment required.* (j) Softball. Physical education equipment*, baseball glove required. (k) Horseback Riding. Stable fee required. (m) Fencing. (n) Cross-Country. Physical education equipment required.* (p) Gymnastics. Physical education equipment required.* (q) Fly and Bait Casting. Students furnish own rod and reel. (t) Flag Football. Physical education equipment required.* (u) Wrestling. Physical education equipment required.* (v) Self Defense. (w) Beginning Judo. Judo uniform, lock and towel required. (x) Handball. Physical education equipment*, glove, ball required. (y) Racquetball. Physical education equipment*, racquet and ball required. (z) Floor Hockey. Physical education equipment required.* Elective Pass/Fail.

*Physical education equipment for men includes the following items: T-shirt, shorts, supporter, socks, gym shoes, lock, towel.

105-1 or 2 Weight Control (P.E.-Men). For students who are overweight, to learn and practice the principles of weight control. Physical education equipment required.* Prerequisite: consent of instructor. Elective Pass/Fail.

106-1 or 2 University Orienteering (Concepts and Techniques) (P.E.-Men). Basic skills and knowledges for cross country running and hiking. Emphasis on basic tool skills, and a variety of outdoor practice and meet participation. Orienteering is a new and "now" activity in the physical education offering. Four field trips (transportation to Little Grassy required.) Elective Pass/Fail.

110-1 to 4 (1, 1, 1, 1) Restricted Physical Education (P.E.-Women). For physically handicapped students as recommended by the Health Service. Elective Pass/Fail.

111-1 to 14 (1 or 2, 1 or 2, 1 or 2, 1 or 2, 1 or 2, 1 or 2, 1 or 2) Swimming (P.E.-Women). (a) Beginning Swimming. Bathing cap required. (b) Intermediate Swimming. Bathing cap required. (c) Synchronized Swimming. Prerequisite: GSE 111B or equivalent. (d) Skin Diving. Prerequisite: consent of instructor. (e) Scuba Diving. Special sections will require transportation cost for field trips. Prerequisite: GSE 111d. (f) Lifesaving. Bathing cap required. Prerequisite: pass special swim test. (g) Canoeing. Fee required for boat rental. Prerequisite: pass special swim test. Elective Pass/Fail.

112-1 or 2 Exercise for Fitness (P.E.-Women). Physical education uniform recommended and tennis shoes required. Elective Pass/Fail.

113-1 to 14 (1 or 2, 1 or 2, 1 or 2, 1 or 2, 1 or 2, 1 or 2, 1 or 2) Dance (P.E.-Women). (a) Square. (b) Folk. Physical education uniform recommended and tennis shoes required. (c) Social. (d) Beginning Contemporary. Physical education uniform recommended and tennis shoes required. (e) Intermediate Contemporary. (f) Ballet. Physical education uniform recommended and ballet shoes required. (h) Tap Dancing. Physical education uniform recommended and taps required. Elective Pass/Fail.

114-(1 or 2 per activity) Individual and Team Activity (P.E.-Women). (a) Archery. Physical education uniform recommended and tennis shoes required. (b) Badminton. Physical education uniform recommended and tennis shoes required. (c) Basketball. Physical education uniform recommended and tennis shoes required. (d) Bowling. Bowling lane fee and shoe rental fee required. (e) Golf. Physical education uniform recommended and tennis shoes required; purchase of rule book required. (h) Tennis. Physical education uniform recommended and tennis shoes required. (i) Volleyball. Physical education uniform recommended and tennis shoes required. (k) Horseback Riding. Stable fee required. (m) Fencing. Physical education uniform recommended and tennis shoes required. (p) Gymnastics and Tumbling. Physical education uniform recommended and tennis shoes required. (r) Track and Field. Physical education uniform recommended and tennis shoes required. (y) Racquetball. Physical education uniform recommended and tennis shoes required. Elective Pass/Fail.

201-2 Healthful Living. Personal and community health. Designed to meet general health education needs and to develop wholesome health attitudes and practices in college students. Elective Pass/Fail.

236-2 Nutritional Ecology of Man. Interaction between man and his environment. Emphasis on nutritional implications of our social, biological, and physical surroundings. Purchase of supplies ranging from \$4.00 to \$5.00. Elective Pass/Fail.

240-2 Human Relations Between the Sexes. Explores concepts and issues including development of sexuality, selection of a life partner, premarital sex experience, modern morality and the development of sexual mores, marriage, family planning, reproduction, varieties of sexual expression, and sex education.

Accountancy (Department)

Accounting is the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information. Such information is required and used by parties external to the business and by management within the business.

The curriculum is designed to prepare a student to assume a professional position as a certified public accountant or to join the management team in industry or government. The curriculum provides a basic understanding of all phases of accounting and permits the student to elect courses to prepare for a particular area of interest.

*Physical education equipment for men includes the following items: T-shirt, shorts, supporter, socks, gym shoes, lock, towel.

The various state laws prescribe the requirements for certification as a certified public accountant. In general, the accounting curriculum prepares the student educationally to meet these requirements.

Accounting majors, in addition to meeting the College of Business and Administration's graduation requirement of 2.00 grade point average in business-prefix courses taken at Southern Illinois University at Carbondale, must also achieve a 2.00 grade point average in accounting-prefix courses taken at Southern Illinois University at Carbondale.

Accounting (Major, Courses)

Bachelor of Science Degree, College of Business and Administration

General Studies Requirements	45
Professional Business Core (see page 64) ²	47
Requirements for Major in Accounting	(6) ¹ + 21
Accounting 321, 322, 341, 365, 486	15
Accounting 432, 442, 453, (choose at least one)	3
Accounting 405, 419, 475, 477 (choose one unless two are chosen above)	3
Economics 315 or Finance 325	(3) ¹
Finance 372	(3) ¹
Electives	7
Total	120

¹Hours shown in parentheses are already included in total hours shown for professional business core.
²Accounting majors should substitute the combination of Finance 271 and 372 for Finance 370.

Courses

- 210-3 Accounting Principles and Control.** Prevalent accounting principles and practices employed in business organizations. Accumulation of data and usefulness of reports are considered. Tax implications of business studied. Not open to students with a major in the College of Business and Administration. No credit given for 210 if credit is claimed for 221. Elective Pass/Fail.
- 221-3 Accounting I.** Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset liability and owners' equity valuation and their relationship to income determination. No credit given for 221 if credit is claimed for 210. Prerequisite: sophomore standing.
- 222-3 Accounting II.** A continuation of Accounting I with emphasis on the analysis and interpretation of accounting reports including ratios and funds flow analysis. The use of accounting information for managerial planning, control, and decision making through budgeting, cost and variance analyses, and responsibility accounting. Prerequisite: 221.
- 301-3 Management Accounting.** Emphasizes the use of accounting information for planning, control, and decision making through budgeting models, cost-volume-profit analysis, responsibility accounting, relevant costing procedures and quantitative techniques. Prerequisite: 222.
- 309-2 Individual Income Tax.** Preparation of income tax returns. Federal income tax law as applied to individuals. Not open to those with a major in accounting. Elective Pass/Fail.
- 311-1 Corporate Federal Income Taxes.** A review of corporate income taxes to include not only rates and dollar amounts but also an appreciation of the different tax impacts possible from similar economic transactions. Not open to accounting majors. Prerequisite: 222. Elective Pass/Fail.
- 319-3 Computers in Accounting.** Electronic data processing techniques and their business applications. Includes functions and limitations of EDP hardware and software, batch versus real time processing, use and structure of files, file maintenance, and an

introduction to computer languages used in business. Prerequisite: 321 and Computer Science 202.

321-3 Intermediate Accounting I. Current accounting principles and procedures relating to elements of financial reporting. Particular emphasis on current and fixed asset valuation. Prerequisite: 222.

322-3 Intermediate Accounting II. Continuation of the study of accounting principles and procedures with emphasis on liabilities, corporate capital, and income determination. Preparation and use of special statements; analysis and interpretation of statements. Prerequisite: 321.

341-3 Cost Accounting. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard cost systems, cost-volume-profit relationships, direct costing, and budgeting. Accounting for complex process production flows, joint and by-products, spoilage, and scrap. Responsibility accounting and reporting. Prerequisite: 222.

365-3 Introduction to Taxation. Background, principles, and procedures for the determination of taxable income as a basis for federal income tax. Particular attention is given those aspects which are at variance with usual accounting treatment in the determination of net income. Includes practice in the methodology of tax solutions. Prerequisite: 222.

390-1 to 4 Independent Study in Accountancy. Independent study of specialized aspects of accountancy not available through regularly scheduled courses. Prerequisite: 322, 341, 365, and consent of department.

405-3 Accounting for Public Organizations. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Includes the conventional budgetary-appropriation process, as well as some of the more recent accounting developments related to public decision making. Prerequisite: 222.

419-3 Accounting Information Systems. Accounting systems design and installation. The study of accounting information systems, including computer-oriented systems, with emphasis on the information and control functions of the management decision-making process. Prerequisite: 322, 341, Computer Science 202.

432-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, corporation, estate, and trust types of organization. Brief study of social security, federal and state estate tax and gift tax. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: 365.

442-3 Advanced Cost Accounting. Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: 341.

453-3 Advanced Accounting. Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: 322.

475-3 Budgeting and Systems. A study of the application of mathematics, statistics, and the computer to specific budgetary and accounting problems. Includes concepts, methods, and tools used in accounting system for planning, coordinating, and controlling business activities. Prerequisite: 341, Computer Science 202.

477-3 Current Developments in Accounting Theory. Critical analysis of current developments in accounting theory, especially as reflected in the publications of major accounting associations. Prerequisite: 322.

486-3 Auditing. Standards, objectives, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisite: 322, 341, 365.

495-3 Internship. Supervised work experience in professional accounting. Not for graduate credit. Prerequisite: outstanding record in accounting and recommendation of the departmental committee on internship. Mandatory Pass/Fail.

Administration of Justice (Major, Courses)

The Bachelor of Science degree with a major in administration of justice meets the career objectives of students interested in law enforcement, courts, corrections, juvenile services, and other roles in social and criminal justice. Within a broad framework of the social and behavioral sciences, an interdisciplinary approach is stressed. A philosophy of service and involvement in the real problems of policy makers, administrators, and practitioners is emphasized. An internship placement rounds out the student's program.

Bachelor of Science Degree, College of Human Resources

General Studies Requirements	45
Requirements for Major in Administration of Justice	36
Core: Administration of Justice 200, 201	6
Course work in the following areas:	
Introductory Research	3
Law	3
Management	3
Behavioral and Social Sciences	9
Field Practice	3
Guided electives	9

With his adviser, the student selects from an approved list of courses in administrative sciences, anthropology, Black American studies, community development, history, philosophy, political science, psychology, rehabilitation, social welfare, and sociology.

Minor	18
Electives	21
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Total	120

Courses

- 200-3 Introduction to Criminal Behavior.** Multidisciplinary study of the etiology and patterning of offender behavior.
- 201-3 Introduction to Criminal Justice System.** Survey of the agencies and processes involved in the administration of criminal justice: The history of English law; the criminal justice process and system, including underlying ideologies, procedures, fundamental legal concepts, and the roles and functions of police, courts, and correctional services.
- 300-3 Assessment of Offenders.** Introduction to the procedures and issues in identifying and evaluating individual differences in offenders and among classes of offenders; analysis of typical diagnostic methods. Prerequisite: 200 and 201 or consent of instructor.
- 301-3 Human Relations in Criminal Justice.** Delineation of major interactive patterns among staff members, between staff and clients, and among clients of probation and parole agencies and correctional agencies; introduction to problems of communication, bureaucracy, and leadership. Prerequisite: 200 and 201 or consent of instructor.
- 303-3 Behavioral Aspects of Investigation.** Principles of behavioral science are applied to the recurrent patterns of criminal investigation as a social and fact-finding process; survey of criminalistics. Prerequisite: 200 and 201 or consent of instructor.
- 304-3 Law Violation, Law Enforcement, and the Community.** Examination of behavioral and social control within the local community; problems raised by social change, assessment of particular issues: traffic control, civil disturbances, vice control, and crime prevention. Prerequisite: 200 or 201 or consent of instructor.
- 305-3 Criminal Law — Introduction to Procedural Aspects and Police Powers.** An introduction to the procedural aspects of criminal law as pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule, civil liberties, eavesdropping, confessions, and related decision-making factors. Prerequisite: 200 and 201 or consent of instructor.
- 316-3 Introduction to Criminal Justice Research.** A basic introduction to the scientific perspective, relationship of research and theory, research design, data collection, data analysis, reporting of research and program evaluation. Emphasis on problems peculiar to criminological research. Individual research projects. Prerequisite: 200 and 201 or consent of instructor.
- 344-2 Drug Use.** Types of drugs, drug impact on the American culture, legal and illegal uses of drugs, offenses related to drug use, reaction of the criminal justice system to drugs and drug-users, and the treatment and prevention programs coping with drug use. Prerequisite: 200 and 201 or consent of instructor.
- 348-3 Treatment Modalities.** Various treatment methods used throughout the criminal justice system. Explanation and evaluation of various treatment techniques; e.g., behavior modification, transactional analysis and other individual and group therapies. Prerequisite: 200 and 201 or consent of instructor.

390-1 to 4 Readings in the Administration of Justice. In-depth, introductory and advanced readings in areas not covered in other Administration of Justice courses. The student must submit a statement describing his topic and relevant reading materials to the faculty member sponsoring the student's readings. Prerequisite: 200 and 201 and consent of faculty sponsor.

395-3 to 15 Supervised Field Experiences in the Administration of Justice. Familiarization and direct experience in applied settings. Under supervision of faculty and adjunct staff, the student assumes a student-participant role in the criminal justice agency. Prerequisite: 200, 201, 12 hours in Administration of Justice courses, and consent of department. Mandatory Pass/Fail.

406-3 Legal Aspects in the Administration of Justice. Substantive jurisprudence in the criminal law, including historical and analytical; substantive law relating to police, courts, and corrections including factors affecting decision making. Prerequisite: 305, or graduate status, or consent of instructor.

415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals, and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches, and citizen groups. Prerequisite: 200 and 201 or consent of instructor.

416-3 Methods of Criminal Justice Research. The principles of scientific inquiry as applied to the study of the criminal justice system. Overview and examples of project design, evaluative research, methodology and statistical techniques appropriate to criminal justice research. Strongly recommended for students who plan to conduct empirical research in fulfillment of master's thesis requirement. Prerequisite: 200 and 201 or consent of instructor.

417-3 Research Practicum in the Administration of Justice. Application of the principles set forth in 416. Experience in the various phases of an actual research project, including project design, data collection and analysis, and effective communication of results via written reports. Prerequisite: 200 and 201 and 416 or consent of instructor.

471-3 Principles of Management in the Administration of Justice. Basic principles and techniques of management in law enforcement, correctional, and other criminal justice agencies. Prerequisite: 200 and 201 or consent of instructor.

472-3 The American Correctional System. (Same as Sociology 472.) A survey of the correctional field, covering probation, institutional treatment, and parole. Historical development, organizational structure, program content, and current problems. Prerequisite: 200 and 201 or consent of instructor.

473-4 Juvenile Delinquency. (See Sociology 473.) Prerequisite: 200 and 201 or consent of instructor.

474-3 Law Enforcement Administration. Study of the organizational patterns, administrative problems, community issues, and internal role systems of American police agencies. Prerequisite: 200 and 201 or consent of instructor.

485-3 Corrections and the Community. Traditional correctional functions are re-defined to emphasize development of resources of community at large, diversion of convicted offenders from institutions, and direct involvement of correctional programs in community affairs. Prerequisite: 200 and 201 or consent of instructor.

490-1 to 3 Independent Study in the Administration of Justice. Supervised readings or independent investigative projects in the various aspects of crime control, treatment of offenders; and management of programs of law enforcement, courts, and correctional agencies. May be repeated up to a maximum of three credit hours. Prerequisite: 200 and 201 or consent of instructor.

492-2 to 6 (2 to 3 per semester) Contemporary Issues in Administration of Justice. A forum for focusing on special interest topics depending on the availability of staff, visiting professors, and other selected instructional resources to cover a contemporary issue of concern to students and the faculty. May re-enroll for a maximum of six credits. Prerequisite: 200 and 201 or consent of instructor.

501-3 Criminal Behavior: The Offender.

502-3 Criminal Behavior as Group Member.

503-3 Criminal Behavior—Legal Aspects.

572-4 Seminar in Criminology.

578-1 to 4 Seminar in Correctional Rehabilitation Counseling.

580-3 Planning for Change in the Administration of Justice.

582-3 Criminal Law and the Correctional Process.

584-3 Seminar in Criminological Program Management.

587-3 Seminar in Law Enforcement.

590-1 to 3 Supervised Readings in Selected Subjects.

592-3 Advanced Seminar in Administration of Justice.

595A-3 or 6 Supervised Field Work (Internship).
595B-3 or 6 Supervised Field Work (Internship).
599-3 to 6 Thesis.

Administrative Sciences (Department, Major, Courses)

The department of Administrative Sciences is concerned with decision making in the allocation of resources toward the achievement of an organization’s objectives. The setting of the organization may be government, business, health, or education, but of greater concern is the administrative process itself regardless of where it takes place.

Students are provided with a curriculum drawing on a variety of disciplines each of which contributes certain conceptual tools and techniques useful in improving the decision making performance of the administrator. Beyond the fundamental departmental requirements and those of the College of Business and Administration, a choice of four specialty programs is available.

Management Systems. The identification of the organization’s information requirements is stressed for the purpose of devising a system to efficiently gather and supply the proper data to the decision maker. This process relies heavily on computer technology but should be clearly distinguished from data processing where the focus is on codifying and manipulating data. Graduates of the program are able to find careers as systems analysts and in other staff functions in large organizations who rely on the flow of current information for effective decision making.

Organizational Behavior. People working together toward the achievement of a common objective is the focal point of this program. Understanding the factors that influence individual behavior and the behavior of groups, particularly in a work environment, is critical to the success of any manager. Students select from courses in psychology and sociology as part of this specialty sequence.

Personnel Management. Administrators make decisions about allocating two kinds of resources—physical and human. The process of securing, motivating and rewarding human resources in sufficient quantity and quality to meet an organization’s objectives is emphasized in this specialty.

Production-Operations Management. Processes of symbolic and mathematical analysis are learned in the development of complex administrative planning and control systems in the direction and evaluation of an organization’s activities. Students with a strong background and interest in mathematics find this program to be challenging and rewarding in preparation for a variety of careers in operations analysis and research.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45
<i>Professional Business Core (see page 64)</i>	47
<i>Requirements for Major in Administrative Sciences</i>	18-25
Administrative Sciences 341, 345, 361, 385	12
<i>Specialization (Choose one)</i>	6-13

Management Systems

Administrative Sciences 456, 457 6
Choose two from the following: Administrative Sciences
352, 431, 453, 483, 485, 489, Accounting 301, 321, 322,
341, 405, 442, 475, Finance 421, 422, 475, Economics
330, 340, 431, 467, Marketing 439, 452, 495, Computer
Science 312,
311f 6-(6)¹

Organizational Behavior

Administrative Sciences 431, and 456 or 474 6
Choose two from the following: Administrative Sciences
489, Accounting 301, 341, 405, Finance 271, 421, 480,
Economics 310, 333, 436, 481, Marketing 439, 452,
Psychology 307, 461, Sociology 332,
Speech 362 6-7-(6-7)¹

Personnel Management

Administrative Sciences 485 and Finance 476
or Economics 436 6-(6)¹
Choose two from the following: Administrative Sciences
431, 489, Speech 362, Psychology 307, 461,
Sociology 332 6-7-(6-7)¹

Production-Operations Management

Administrative Sciences 352, 453, 483 9
Choose one from the following: Administrative Sciences
457, 489,
Computer Science 311f, Accounting 341 3-(3)¹

Electives	0-10
Total	120

¹Hours shown in parentheses are already included in total of hours shown for professional business core.

Courses

170-3 Introduction to Business Administration. Survey of business. General knowledge of the modern business world, the composition and functions of the business organization, as well as business as a social institution. Open only to freshmen and sophomores. Does not satisfy a College of Business and Administration requirement. Elective Pass/Fail.

208-4 Interpretation of Business Data. Uses of business data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics which are useful to the decision maker. Problems stress solution to questions typically raised in businesses. Prerequisite: Mathematics 116 or 139 or equivalent. Elective Pass/Fail.

300-3 Internship in Administrative Sciences. Supervised work experience that relates to the student's academic program and career objectives. Not repeatable for credit. Prerequisite: prior approval of the department. Mandatory Pass/Fail.

301-3 Management and Supervision. Functions of management and the requisites for effective supervision are emphasized by way of application to practical situations. For non-business majors who expect to assume supervisory responsibility where successful allocation and evaluation of human resources is necessary. Not open to students enrolled in the College of Business and Administration. Credit not available for both 301 and 304. Prerequisite: GSB 202 or consent of instructor. Elective Pass/Fail.

302-3 Administrative Communications. Creating and managing interpersonal administrative communications including the analysis, planning, and practice of composing different types of internal and external communications in various administrative and business contexts.

304-3 Organization Administration. Basic concepts of the administrative process are considered with emphasis on executive action to develop policy, direction, and control based on traditional and behavioral science approaches to decision making. Prerequisite: GSB 202 or equivalent and junior standing or consent of instructor. Elective Pass/Fail.

318-3 Production-Operations Management. An introduction to the design, operation, and control of systems or processes by which materials, labor, and capital are combined in an organized way with the objective of producing goods or services. Topical coverage includes the systems concept, planning, forecasting, job design, location, layout, logistics, scheduling, and production, inventory, quality, labor, and cost control. Prerequisite: 208, Mathematics 117 or 140. Elective Pass/Fail.

341-3 Organizational Behavior I. The study of human problems in administration including the analyses of individual, group, and inter-group relations under a broad range of organizational settings. Theory and case analyses. Prerequisite: 208, and 304. Elective Pass/Fail.

345-3 Introduction to Management Systems. Integrates topics of management and organization, information, computers, and the systems approach. Emphasizes planning, design, and implementation of information systems to aid management decision making. Application of computer techniques to develop, manipulate, and analyze system models. Prerequisite: 318, Computer Science 202. Elective Pass/Fail.

352-3 Management Science I. An introduction to mathematical model building in business and solution techniques commonly used to solve such models. Topical coverage includes introduction to models and decision theory, classical constrained optimization, linear programming and some extensions, inventory, maintenance, and replacement models. Prerequisite: 318. Elective Pass/Fail.

361-3 Research Methods in Administration. Design of research to assist managerial decision making. Concepts, tools, sources, and methods of research. Planning, collecting, organizing, evaluating, and presenting research data. Prerequisite: 304, 208, GSD 101. Elective Pass/Fail.

385-3 Human Resources Administration. Development, application, and evaluation of policies, procedures, and programs for the recruitment, selection, development, and utilization of human resources in an organization. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.

402-1 Personal Adjustment to Business. The job placement process and the work environment from the viewpoint of the applicant. Emphasis on career planning, manpower analysis, placement and interviewing techniques with a stress on the transition from the academic community to the business and professional environment. Not offered for graduate credit. Prerequisite: senior standing. Mandatory Pass/Fail.

431-3 Organizational Behavior II. The study of modern theories of complex organizations. Particular emphasis is placed on open-systems perspectives of administrative theory and the adaption of the organization to a changing environment. Prerequisite: 341 or consent of instructor. Elective Pass/Fail.

453-3 Management Science II. A continuation of 352. Mathematical model building in business and solution techniques commonly used to solve such models. Topical coverage includes sequencing and scheduling algorithms, PERT, queuing models, Markov chains, simulation and decision theory. Prerequisite: 352. Elective Pass/Fail.

456-3 Advanced Management Systems. Survey of systems theory and models related to management and administration of a variety of organizations. Topics include systems analysis, diagnosis, and synthesis; hierarchies; information and control; and general systems theory. Prerequisite: 341, 345. Elective Pass/Fail.

457-3 Management Systems Applications. Investigation of selected systems and computer based methods for aiding management decision-making. Topics include systems analysis applications, simulation, and decision models. Prerequisite: 456. Elective Pass/Fail.

474-3 Management Responsibility in Society. Analysis of the cultural, social, political, economic, and immediate environment of the organization. Particular emphasis is given to the manner in which the manager adapts to and is influenced by his environment and its conflicting demands. Prerequisite: senior standing or consent of instructor. Elective Pass/Fail.

479-3 Problems in Business and Economics. (Same as Economics 479.) Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 208 or Economics 308, Economics 215, Marketing 304. Elective Pass/Fail.

481-3 Administrative Policy. Development of organizational strategies and policies within environmental and resource limitations. Emphasis upon the application and integration of basic principles from all areas of business by case problem analysis, simulation exercises, and group participation. Not for graduate credit. Prerequisite: senior standing, 304, 318, Finance 320, Marketing 304, or equivalent. Elective Pass/Fail.

483-3 Advanced Production-Operations Management. Internal problems of managerial control of production including recent developments in theory and techniques; case

material will be utilized for the development of analytical ability. Prerequisite: 318. Elective Pass/Fail.

485-3 Advanced Human Resources Administration. Analysis of problems in personnel management with emphasis on current trends and techniques. Case problems, special reports, and experiential approaches are used as a basis for examining methods of maximizing the utility of an organization's human resources. Prerequisite: 385 or consent of instructor. Elective Pass/Fail.

489-12 (3, 3, 3, 3) Seminar in Administrative Sciences. Investigation of selected special or advanced topics in seminar format. Topics may include, but are not limited to: management responsibility in society, wage and salary administration, health services administration, data processing management, current issues in management, etc. (a) Personnel. (b) Organization. (c) Systems. (d) Quantitative Methods. May be taken singly. Prerequisite: consent of department chairman and instructor. Elective Pass/Fail.

491-1 to 6 Special Topics in Administration. Utilizes special faculty resources to enable individually, the exploration of an advanced area of study through research by means of data analysis and/or literature search. Prerequisite: consent of department chairman and instructor.

Aerospace Studies (Department, Courses)

Aerospace Studies is a voluntary course sequence leading to a commission as an officer in the United States Air Force. When commissioned, all officers must have at least a baccalaureate degree; hence completion of the program is contingent upon maintaining satisfactory progress toward graduation. Enrollment in the first two years (general military course) is unrestricted and no military obligation is incurred. Special students who do not intend to obtain a commission are welcome.

Acceptance into the last two years (professional officer course—300 level) is competitive and requires qualification on the Air Force Officer Qualifying Test and a physical examination. While the emphasis is on obtaining pilots and navigators, there is an opportunity to compete for non-flying positions. The particular field of concentration for potential flying officers is not a factor in selection. For non-flying officers, however, the field of concentration must be related to one of the wide range of officer specialties in the air force. Students in the professional officer course do incur a military obligation. They are paid a monthly tax-free subsistence allowance and have a draft deferment. Graduate students who have two years remaining at the University, not counting summers, are eligible.

Qualified students may enter directly at the 300 level without completing the general military course by attending a six-week field training course during the summer prior to entrance. Four year students attend a four-week field training course. Field training is conducted at air force bases and students are paid while attending.

Courses

100-0 (0, 0) Corps Training. (a) Supervised training laboratory taken concurrently with 101. (b) Taken with 102. Required of regular students. Designed to develop the student's leadership potential and knowledge of customs and courtesies of the U.S. Air Force.

101-1 United States Air Force. Evolution of modern aerospace power and concepts on which it was developed. Introduction to aerospace support forces. Includes airlift, research and development, logistics, and education and training.

102-1 Aerospace Offensive and Defensive Forces. Introduction to U.S. general purpose and strategic offensive forces, and the constraints involved in the use of modern weapons. Introduction to concepts, organization, equipment, and procedures involved in strategic defense of the United States.

200-0 (0, 0) Corps Training. (a) Leadership laboratory taken concurrently with 201. (b) Taken with 202. Required of regular students. Continued development of student's leadership potential. Prerequisite: 100.

201-1 The Development of Air Power I. History of manned flight from pre-aircraft to end of World War II. Develops the themes of doctrine, technology and evolution of aircraft, and U.S. Air Force.

202-1 The Development of Air Power II. History of United States Air Force from separate military department status into early 1970's. Highlights the versatility of air power and the changing role of machines, men, and tactics in air warfare.

258-4 GMC Equivalency. Work experience credit for 101, 102, 201, and 202. This credit will be evaluated by the head of the Aerospace Studies Department. Prerequisite: satisfactory completion of the academic phase of the six-week field training course for AFROTC two-year applicants.

300-0 (0, 0) Corps Training. (a) Leadership laboratory taken concurrently with 301. (b) Taken with 302. The student participates as a cadet officer to develop the skills of leadership and team work required of a junior officer. Prerequisite: GMC or field training.

301-3 Civil-Military Relationships. Analysis of crucial questions concerning the role and function of the military officer in civil-military interactions. Examines significant contemporary issues in the perspective of prevailing social values and societal attitudes toward the military. Prerequisite: satisfactory completion of GMC or six-week field training.

302-3 Formulation of Defense Policy. Explores the dynamics involved in the formulation and implementation of American defense policy. Examines the international political trend, the fundamental causes of inter-state conflict, and the constraints—domestic as well as international—which are operative in restricting the options available to American defense policy makers. Prerequisite: satisfactory completion of GMC or six-week field training.

340-0 (0, 0) Corps Training. (a) Leadership laboratory taken concurrently with 351. (b) Taken with 352. Develops skills of leadership and team work required of a junior officer. Includes a study of the facilities, services, and benefits available to junior officers to insure orderly transition into a military life.

351-3 Air Force Leadership. Professionalism as related to the Air Force officer, leadership in command and staff roles, human relations, leadership studies and approaches, and a study of the military justice system, oral and written assignments. Prerequisite: 301 and 302, or consent of the instructor.

352-3 Air Force Management. Theory and practice of management, with specific reference to the Air Force and the junior officer. Participation in problem situations and oral and written assignments. Prerequisite: 351, or consent of instructor.

African Studies (Minor)

African area studies is available through an interdisciplinary minor, involving courses in anthropology, Black American studies, geography, history, linguistics, political science, and religious studies. Each of these departments has one or more faculty who specialize in Africa and who are interested in assisting students wanting to study about Africa. The requirements for the African studies minor are listed below.

Minor

The African studies minor consists of 15 hours with 9 hours in required core courses and 6 hours of electives.

Required Core Courses: 9 hours selected from Anthropology 310G, Black American Studies 225, Geography 365, History 387a,b, Political Science 465.

Electives: 6 hours selected from any courses not used as part of the core or Anthropology 420-3 (only when an African language is studied), History 487, Linguistics 450-3 (only when African languages are studied), Religious Studies 333, or 2-3 hours of reading courses on Africa sponsored by any of the departments listed above or below.

Suggested related courses which do not count toward the minor are: Agricultural Industries 442, 443, Anthropology 310H, 315, 405, 410H, Economics 322, or Political Science 452.

Agricultural Education (Major)

In agricultural education, completion of a four-year course of study leads to certification as a teacher of agricultural occupations. A student has the opportunity to specialize in one of the following areas: agriculture business, agricultural mechanization, ornamental horticulture, plant production, soil conservation, parks and recreation, forestry and conservation, and animal production. Courses in both the School of Agriculture and the College of Education are included.

Bachelor of Science Degree, School of Agriculture

<i>General Studies Requirements</i>	45
GSA 106, 115	6
GSB 212 or 300	3-4
GSD 101, 107, 118, 153	11
GSE 201 and two hours of GSE 100 or 114	4
<i>Requirements for Major in Agricultural Education</i>	40
Agricultural Industries (agricultural economics)	6
Agricultural Industries (agricultural mechanization)	6
Agricultural Industries 311 and one of the following: 300, 315, 411, 414	5-6
Animal Industries	6
Plant and Soil Science	6
Other Agriculture electives	10-11
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68	
<i>Electives</i>	11
<i>Total</i>	120

Agricultural Industries (Department, Major, Courses)

Work is offered in agricultural industries in two major specializations, (a) agricultural economics and (b) agricultural mechanization. In agricultural economics, there are two options: 40 hours in agriculture and 32 hours in agriculture. The 40-hour option provides a broad training in agriculture. The 32-hour option provides additional work in economics or business.

In agricultural economics, courses are offered in the following fields: farm management, farm credit, agricultural prices, agricultural marketing, cooperatives, and farm policy.

In agricultural mechanization, courses are offered in six areas: basic construction processes, agricultural power and machinery, agricultural electrification, agricultural structures, soil and water conservation, and agricultural materials handling and processing.

For a number of courses taught in the department, there will be an additional charge for field trips, laboratory manuals, or supplies.

Bachelor of Science Degree, School of Agriculture

AGRICULTURAL INDUSTRIES MAJOR—AGRICULTURAL ECONOMICS SPECIALIZATION

	Options	
	40 HOURS	32 HOURS
General Studies Requirements	45	45
GSA 106 and 115 or equivalents	6	6
GSD 101, 107, 118, 153	11 ¹	11 ¹
Requirements for Major in Agricultural Industries	54	53
Agricultural Requirements	(40)	(32)
Agricultural Industries 204	3 ²	3 ²
Agricultural Industries 340, 350, 360	9	9
Other Agricultural Industries	11	8
Animal Industries	3 ³	3 ³
Plant and Soil Science	3-4 ⁴	3-4 ⁴
Electives in Agriculture	10-11	5-6
Business and Economics Requirements	(14)	(21)
Economics 214, 215	6	6
Accounting and quantitative methods	8 ⁵	8 ⁵
Other business and economics courses	0	7
Electives	21	22
Total	120	120

¹ Mathematics 110a,b highly recommended.
² Agricultural Industries 204 substitutes for GSB 211.
³ One of the following: 121 and 122, 315 or 337.
⁴ One of the following: 200, 220, 240, 328a,b, 468, or 346 and 347.
⁵ Three courses in statistics and accounting in two fields.

AGRICULTURAL INDUSTRIES MAJOR—AGRICULTURAL MECHANIZATION SPECIALIZATION

General Studies Requirements	45
GSA 101, 115, 106 or equivalent	9
GSD 101, 118, 107 or trigonometry, 153	11
Requirements for Major in Agricultural Industries	52
Agricultural Industries 347, 373, 378, 379, 472, 473, 474, 475, Plant and Soil Science 346, plus six additional elective hours in agricultural industries	27
Animal Industries	3
Plant and Soil Science or Forestry	6
Agricultural electives	16
Electives	23
Total	120

Minor

A minor in agricultural industries is offered. A total of 16 hours within the department is required. A counselor within the department must be consulted before selecting this field as a minor.

Courses

204-3 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture. Elective Pass/Fail.

258-1 to 30 Work Experience. Credit for past work experience and/or on campus work experience with Agricultural Industries and the Office of Student Work and Financial Assistance.

300-3 Occupational Simulation and Cluster Studies. (See Occupational Education 300.)

302-2 Country Living Management and Information. Managing a small acreage as an avocation. Types of decision problems and sources of information.

311-3 Agricultural Education Programs. Nature and scope of the different programs involved in teaching agricultural occupations and methods of developing them.

315-2 Leadership of Youth and Peer Groups. (Same as Occupational Education, Home Economics Education, Business Education 315.) Identification and discussion of the role of organizations, both structured and unstructured and identification and development of those desirable qualities of leadership.

340-3 Economic Analysis of Food and Rural Development Policies. An economic analysis of the structure, problems, and alternative public policies of the food production industry. The dimensions and causes of rural poverty and alternatives for rural development. Prerequisite: 204 or consent of instructor. Elective Pass/Fail.

347-1 Laboratory Practices in Soil and Water Conservation. (Same as Plant and Soil Science 347.) Effects of soil properties and rainfall characteristics on erodibility of soils. Laboratory work in land surveying, relief mapping, and a study of structures related to soil and water conservation.

350-3 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Prerequisite: 204 or one course in economics. Elective Pass/Fail.

351-3 Farm Financial Management. Analysis of the capital structure of agriculture and sources of capital. Credit analysis of farm business employing financial statements. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.

359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing or consent of instructor. Elective Pass/Fail.

360-3 Cooperatives and Agri-Business Management. Problems and practices in agri-business operations including forms of organization, alternative organization and structure impacts on decision making, tools of decision making, financial analysis and methods of improving the effectiveness of the marketing system. Prerequisite: 204 or equivalent. Elective Pass/Fail.

361-2 Distribution in Agri-Business. The nature of agri-business distribution, opportunities to improve the effectiveness of the distribution system through an understanding of the function involved. Prerequisite: 204 or equivalent. Elective Pass/Fail.

371-2 Skills in Home Maintenance and Repair. Common home related maintenance and repair activities. Units include safety and developing the home shop; construction skills related to masonry, concrete, plumbing and painting; basic electricity and practical home wiring; and lawn, garden and recreational equipment maintenance and operation.

373-3 Agricultural Production Machinery. Selection, application, operation, maintenance, adjustments, calibration, and repair of agricultural production machinery.

376-2 Applied Graphics. Fundamentals of interpreting graphic illustrations, sketching, drawing and lettering in agriculture, forestry, and landscape design.

377-2 Surveying and Planning. Surveying, mapping, land measurement, contouring, planning waterways and terraces and other water control structures used in the development and conservation of forests and agricultural land.

378-3 Construction Processes in Agriculture. Principles of shop organization; tool and equipment utilization and application; safety as related to woodworking; concrete construction; welding and metal fabrication; and plumbing.

379-3 Basic Mechanical Processes in Agriculture. Tool usage, instrumentation and principles in electricity, soil and water, and small engines.

381-1 to 4 Agricultural Seminar. Discussion of special topics and/or problems in the fields of agricultural industries. Prerequisite: junior standing and consent of department.

388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: major department or program approval.

390-1 to 4 Special Studies in Agricultural Industries. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairman.

391-1 to 4 Honors in Agricultural Industries. Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior, GPA 3.0 with 3.25 in major; approval of staff member, department chairman. Elective Pass/Fail.

401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Prerequisite: junior standing or consent of instructor. Elective Pass/Fail.

402-1 to 18 (1 to 6 per topic) Problems in Agricultural Industries. (a) Agriculture Economics. (b) Agriculture Education. (c) Agriculture Mechanization. Designed to improve the techniques of agriculture industries workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in a master's degree program. Prerequisite: consent of chairman.

411-3 Program Development in Agricultural Extension. Principles and procedures in developing extension programs with emphasis on program determination and methods. Prerequisite: junior standing.

412-2 Principles of Agriculture Mechanization. Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories.

414-3 Adult Education Procedures, Methods, and Techniques. Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.

415-3 Beginning Teacher Seminar. The application, in the professional field setting of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Prerequisite: consent of instructor.

440-3 Land Resource Economics. (Same as Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; and land utilization as related to institutional arrangements. Prerequisite: 204, GSB 211 or consent of instructor. Elective Pass/Fail.

442-2 Agricultural Development in Emerging Countries. Principles and practices in improving agriculture in areas with limited capital and low levels of technology. Prerequisite: 204 or GSB 211. Elective Pass/Fail.

443-2 Marketing Practices and Problems in Developing Countries. Types of markets, assembly of products, storage, transportation, quality determination, and pricing practices which are peculiar to the developing countries. Market organization and practices for the major export products and the principal domestic foods and fibers in such countries. Methods of progressively improving such markets. Prerequisite: 204 or equivalent. Elective Pass/Fail.

450-3 Advanced Farm Management. Application of linear programming to farm planning including enterprise selection, resource allocation, and least cost ration formulation. Farm decision making under uncertainty and analysis of farm expansion alternatives. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.

460-3 Agricultural Prices. Measurement and interpretation of factors affecting agricultural prices. Construction of index numbers, trend analysis, seasonal and cyclical price movements and the measurement of relationships between price and other variables. Prerequisite: 360 or equivalent.

461-3 Agriculture Business Management. Function of top management in agribusiness, such as: determining objectives, developing sound and consistent policies for achieving objectives; organizing the administrative personnel to carry out the plans; guiding and maintaining the administrative organization. Prerequisite: 360.

462A-1 Agricultural Marketing Problems and Practices — Livestock. Problems and their solutions in marketing livestock. Prerequisite: 360. Elective Pass/Fail.

462B-1 Agricultural Marketing Problems and Practices — Field Crops. Problems and their solutions in marketing field crops. Prerequisite: 360. Elective Pass/Fail.

462C-1 Agricultural Marketing Problems and Practices — Dairy and Poultry. Problems and their solutions in marketing dairy and poultry products. Prerequisite: 360. Elective Pass/Fail.

462D-1 Agricultural Marketing Problems and Practices—Horticultural Crops. Problems and their solutions in marketing horticultural crops. Field trips cost \$5.00. Prerequisite: 360. Elective Pass/Fail.

472-2 Agricultural Tractors and Engines. The principles of selection, operation, maintenance, and mechanics of tractors and other agricultural internal combustion engines. Prerequisite: 379.

473-2 Advanced Agricultural Electricity. Application of electricity to agricultural problems. An emphasis on principles of electrical distribution on the farm and the

agri-business operation. Planning the efficient usage of electrical machinery and a study of components parts to increase productivity and save labor. Prerequisite: 379 or equivalent.

474-2 Advanced Agricultural Structures. A discussion and study of design characteristics applicable to farm structures. Consideration of economics, costs, environment, arrangements, materials and type of structures. Plans and drawing of farmstead layout, service buildings, and rural residential buildings will be made. Prerequisite: 378 or equivalent.

475-3 Agricultural Materials Handling, Processing, and Storage. Arrangement of systems for animal waste disposal, feed handling and processing, and storage of agricultural products. Prerequisite: 378 or 379 or 473 or 474.

485-3 Principles and Philosophies of Vocational and Technical Education. (See Occupational Education 485.)

500-3 Agricultural Industries Research Methodology.

525-3 Cooperative Vocational-Technical Education.

550-3 Resource Allocation in Agriculture.

560-2 Advanced Agricultural Prices.

562-3 Advanced Agricultural Marketing.

571-3 Current Problems and Research in Agricultural Power and Machinery.

581-1 to 12 (1 to 4 per topic) Seminar.

588-1 to 8 International Graduate Studies.

590-1 to 4 Readings.

593-1 to 4 Individual Research.

595-1 to 4 Agricultural Occupation Internship.

599-1 to 6 Thesis.

Agriculture (Courses)

Courses

259-2 to 40 Technology in Agriculture. For credit earned in technical or occupational proficiency above the high school level (by departmental evaluation).

333-2 Agriculture and Forestry Environmental Problems. An overview course directed at the environmental problems of food, fiber and forest products, production and processing and their potential solutions. A team taught course within the School of Agriculture.

401-3 Fundamentals of Environmental Education. (Same as Recreation 401.) A survey course designed to help education majors develop an understanding of environmental problems and an awareness of how these types of problems can be handled both inside and outside the classroom. Prerequisite: ten hours of biological science, or ten hours of recreation and/or education, or consent of instructor.

423-3 Environmental Interpretation. (Same as Forestry 423 and Recreation 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation.

Agriculture, General (Major)

General agriculture is an excellent choice of agricultural major for the student who wishes a flexible program which permits him ample selection of courses to satisfy his interests and abilities, as well as to attain his educational and professional goals. The minimum requirements give the student a broad background in agriculture; the unusual freedom in selecting courses to fulfill these minimum requirements as well as the large number of free electives permit the student to individualize his educational experience.

Students gain basic preparation for many of the agricultural careers: general farming, agricultural services, agricultural extension, agricultural communications, agricultural business, agricultural industry, and agricultural production. Two specializations within the general agriculture major, environmental studies and country living, reflect current emphases and interest in agriculture.

Environmental Studies Specialization. In addition to serving as preparation for entry into the traditional agricultural and agricultural related occupations, students now find that the general agriculture major, with the study of soils, crops, forests, animals and their interrelatedness, is an excellent and practical way to study environmental and ecological problems. Choosing his agriculture and elective courses with this emphasis in mind permits the student to specialize in environmental studies within the major, general agriculture. For this specialization, the general agriculture requirements remain the same; however, to fulfill the requirements, a student must complete, as agriculture or elective courses, thirty hours from among Agriculture 333, 401, 423; Agricultural Industries 440; Animal Industries 455; Forestry 301, 312, 331, 409, 430, 453; Plant and Soil Science 328A, 346, 420, 468; Economics 333; Thermal and Environmental Engineering 314; Political Science 325. Substitute courses may be approved through the office of the dean of the School of Agriculture.

Country Living Specialization. This specialization is available in the general agriculture major. This area of study provides the student with a background to more effectively manage and enjoy an acreage in the country. Suggested courses are Agricultural Industries 302, 371; Animal Industries 121, 201, 319; Forestry 341; Plant and Soil Science 238, 325, 328, 346. The selection of these courses or others in the School of Agriculture should be made by the student jointly with a staff member in the School.

Bachelor of Science Degree, School of Agriculture

<i>General Studies Requirements</i>	45
GSA 106 or chemistry substitute	3
Botany 200 and Zoology 118	6
GSB 211 or Agricultural Industries 204	3
Elective GSB ¹	6
GSC ¹	9
Additional GSA, GSB and/or GSC	3
GSD 101, 107, 153	9
GSD 117, 118, or 119	2
GSE	4

¹For environmental studies specialization, GSB 220 and GSB/C 221 are required.

<i>Requirements for Major in General Agriculture</i>	40
Animal Industries	8
Agricultural Industries	8
Plant and Soil Science	8
Agricultural and Forestry Electives	16
<i>Electives</i>	35
<i>Total</i>	120

Minor

A minor in general agriculture with either an environmental studies or a country living specialization requires 16 hours in the respective area from the courses listed above for the specialization.

Allied Health Careers Specialties (Program, Specialized Major)

Individualized courses of study leading to specialties in allied health career fields are offered by the School of Technical Careers through programs which combine clinical experience with appropriate courses from throughout the University, from community colleges, and from other educational institutions.

Each student works with an adviser to design a core curriculum and clinical experience in an appropriate clinical setting. The student may specialize in such fields as medical laboratory technology, environmental health, medical record technology, medical office assisting, occupational therapy assisting, and radiologic technology.

Because programs are individually designed, prospective students must consult with the faculty about course and program requirements. Persons interested in the allied health careers specialties program should contact the chairman of the Division of Allied Health and Public Services.

The program is intended to accommodate the non-traditional student. Enrollment is limited by the availability of clinical facilities and supervising faculty; the prospective student is urged to begin the admission and advisement process well in advance of the semester in which he wishes to begin his studies.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Animal Industries (Department, Major, Courses)

Instruction, research, demonstration, and consultation are provided in dairy, horse, livestock and poultry production, animal behavior, meats, pets, and animal hygiene. Courses are offered in all phases of animal production and management.

The student has opportunity to select courses in other areas of agriculture or related fields, such as business, biology, or physical sciences. This selection allows the student to include in his studies the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

In addition to the production, and the science and pre-veterinary medicine options, the department also offers a two-year and a three-year curriculum in pre-veterinary medicine. These allow qualified students to transfer to accredited colleges of veterinary medicine prior to receiving the Bachelor of Science degree in animal industries.

A major in animal industries may not take a departmental course on an elective Pass/Fail basis if the credits are to be applied toward the required thirty-three hours in animal industries courses. Majors may take departmental courses beyond the thirty-three hour requirement on an elective Pass/Fail basis.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, School of Agriculture

ANIMAL INDUSTRIES MAJOR—PRODUCTION OPTION

<i>General Studies and Substitutes</i>	46
Substitute Chemistry 140a,b or equivalent for	
GSA 106	8
GSD 153 recommended	2
GSA 208	1
Zoology 120b	4
<i>Requirements for Major in Animal Industries</i>	45
Animal Industries 121, 122, 211, 215, 310 or 311a,	
315, 331, 332, and 381	20-21
Animal Industries electives including a minimum	
of two 400-level courses	12-13
Agriculture electives excluding Animal	
Industries	8
Microbiology 301	4
<i>Electives</i>	29
<i>Total</i>	120

ANIMAL INDUSTRIES MAJOR—SCIENCE AND PRE-VETERINARY OPTION

<i>General Studies and Substitutes</i>	59
Substitute Chemistry 222a,b or equivalent	
for GSA 106	8
Substitute Physics 203a,b and 253a,b or	
204a,b and 254a,b for GSA 101	8
Substitute Mathematics 110a,b for GSD 107	5
Biology	8
GSA 208	1
GSD 153 recommended	2
<i>Requirements for Major in Animal Industries</i>	56
Chemistry 344, 345, 346, and 347	11
Microbiology 301	4
Animal Industries 121, 122, 211, 215, 310 or	
311a, 315, 331, 332, and 381	20-21
Animal Industries electives including a minimum	
of two 400-level courses	12-13
Agriculture electives excluding Animal Industries	8
<i>Electives</i>	5
<i>Total</i>	120

Minor

A minor in animal industries is available to those interested in livestock production and care of companion animals. A total of 16 hours within the department is required. Courses may be selected from the areas of nutrition, hygiene, breeding and genetics, reproductive physiology, behavior, meats, and livestock production, including horses and pets. An adviser within the department must be consulted before selecting this field as a minor.

Courses

121-3 Science of Animals that Serve Mankind. An overview of animal agriculture as related to human needs. Prerequisite: concurrent enrollment in 122. Elective Pass/Fail.

122-1 Production and Processing Practices of the Animal Industry. Livestock facilities, demonstration of management practices of animals for Man's use and the processing of animal products. Elective Pass/Fail.

201-3 Care and Management of Pets. Principles and practices of proper selection, feeding, and care of companion animals. Emphasis is placed on the dog and cat but other species are considered. Nutrition, health care, behavior, training, and reproduction are discussed. Elective Pass/Fail.

211-2 Anatomy, Growth, and Development. Anatomy (gross and microscopic) and development processes of bone, muscle, and fat tissue of meat animals and the factors which influence their relative rates of formation during the growth process and thus alter body composition and product quality. Prerequisite: 121. Elective Pass/Fail.

215-2 Introduction to Animal Nutrition. An up-to-date study of basic principles of animal nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of livestock nutrition in today's animal environment. Prerequisite: GSA chemistry or equivalent. Elective Pass/Fail.

220-2 Equitation. Equitation as related to horse training and management. For students who have completed 319, have limited riding experience, and need equitation training to enter 419. Enrollment limited. Prerequisite: consent of instructor.

258-1 to 10 Work Experience. Credit given for past work experience related to the student's major area of specialization prior to University entrance, or on-campus work experience developed through the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of chairman.

310-3 Meat, Poultry, and Milk Products as Related to the Consumer. Processing and distribution including inspection, grading, processing methods and merchandising as well as selection and preparation including pricing, storage or preservation, cooking, serving, and the contribution to a well-balanced diet of meat, poultry, and milk products. Elective Pass/Fail.

311-4 (2, 2) Breeds, Classes, Grades, and Selection of Farm Animals and Poultry. (a) Discussion of breeds and classes of livestock, dairy and poultry; grading and selection of breeding and market animals and their carcasses or products. (b) Competitive judging and selection of livestock, dairy, or poultry. Field trips required. Participation on S. I. U. judging team is not a required part of this course. Must be taken in a,b sequence. Prerequisite: 121 recommended. Elective Pass/Fail.

315-3 Feeds and Feeding. Principles of domestic applied animal nutrition. Feed ingredients meeting nutritional requirements. Balancing rations for specific needs. Cost calculations. Prerequisite: 215. Elective Pass/Fail.

319-3 Horses. An introductory course designed for student with interest in horses regardless of their major or background. Lectures, demonstrations, and laboratory work with horses provides basic information and terminology as well as principles and practices of proper selection, use, care, and management of horses. Elective Pass/Fail.

331-3 Functions of Animal Systems. A course in the physiology of domestic animals. Various functions of mammalian organisms are discussed using the organ system approach. Human physiology is used as a basis to present the systemic functions of domestic animals. Differences in the functions of monogastric, ruminant, and avian species are presented.

332-3 Animal Breeding and Genetics. The application of basic principles of genetics and breeding systems to the improvement of farm animals and poultry. Prerequisite: 121 or biology. Elective Pass/Fail.

337-3 Animal Hygiene. Principles of prevention and control of infectious, nutritional, and parasitic disease of farm animals. Elective Pass/Fail.

359-2 to 6 (2 to 3, 2 to 3) Intern Program. Work experience program in either an

agricultural agency of the government or agri-business. Prerequisite: junior standing and consent of chairman. Mandatory Pass/Fail.

380-2 to 6 Field Studies in Foreign and Domestic Animal Agriculture. A travel course to observe and study the operation and management of farms, ranches, and feedlots as well as agri-business firms supporting animal production such as food processors, feed manufacturers, and housing or equipment companies in either the United States or foreign countries. A written report is required. The travel fee charged to the student will depend on the nature and the length of the course.

381-1 Animal Science Seminar. Discussion of problems and recent development in animal science. Prerequisite: junior-senior standing. Elective Pass/Fail.

390-1 to 4 Special Studies Animal Industries. Assignments involving research and individual problems. Prerequisite: juniors and seniors only and consent of chairman. Mandatory Pass/Fail.

414-2 Animal Feed Quality Control. Feed quality control-laboratory procedures for nutrient determinations used in animal feed quality control Prerequisite: 315.

415-3 Monogastric Nutrition. Advanced principles and practices involved in meeting nutrient requirements of monogastric animals. Prerequisite: 315.

416-2 Ruminant Nutrition. Practical knowledge gained of problems associated with digestion, absorption, and metabolism of nutrients as related to domestic ruminants. Prerequisite: 315 or consent of instructor.

419-3 Stable Management and Horsemanship. Laboratory experience in routines of horse care, training, and management. Field trips. Prerequisite: 319.

420-4 Commercial Poultry Production. Principles and practices of management of broilers, layers, and turkeys as adapted to commercial operations. Field trip. Prerequisite: 315 or consent of instructor.

421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: junior standing plus 121 or one year of biological science.

430-4 Dairy Cattle Management. Application of the principles of breeding, nutrition, physiology, and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices, and quality milk production. Prerequisite: 315, 332.

431-4 Reproductive Physiology of Domestic Animals. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones, reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination; pregnancy tests; diseases. Prerequisite: 121 or a course in physiology.

432-2 Quantitative Inheritance of Farm Animals. A review of the genetic principles underlying changes in animal breeding population; interpretations of gene frequency, heritability, and genetic correlations; application of selection and breeding systems in farm animals. Prerequisite: 332. Elective Pass/Fail.

434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking, mastitis. Prerequisite: GSA 208 and Chemistry 140B or equivalent.

455-2 Animal Waste Management. Acquaints the student with the scope and problems involved with animal waste management, current regulations and laws on environmental protection. Principles covering waste management technology and current livestock waste management systems are presented. Field trips will be scheduled. Prerequisite: junior standing.

465-4 Swine Production. Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs and enterprise analysis. Field trip. Prerequisite: 315 and 332 or consent of instructor.

480-3 Sheep Production. Breeding, feeding, and management of sheep. Field trip. Prerequisite: 315.

485-4 Beef Production. Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Prerequisite: 315 and 332 or consent of instructor.

489-2 Behavioral Manipulation of Animals. Applied aspects of animal behavior with emphasis on domesticated animals. Prerequisite: GSA 209 or consent of instructor. Elective Pass/Fail.

500-3 Research Methods in Agricultural Science.

502-2 Surgical Research Techniques in Farm Animals.

506-3 Instrumentation Methods in Agricultural Science.

515-3 Energy and Protein Utilization.

516-3 Minerals and Vitamins in Animal Nutrition.

531-2 Livestock Management for Reproductive Efficiency.

- 581-1 to 2 (1, 1) Seminar.
- 588-1 to 8 International Graduate Studies.
- 590-1 to 3 Readings in Animal Industries.
- 593-1 to 3 Individual Research.
- 599-1 to 6 Thesis.

Anthropology (Department, Major, Courses)

Anthropology, as a liberal arts major, attracts students of two major types: those who intend to continue in anthropology and obtain an advanced degree and those who find a particular subdiscipline within anthropology attractive and who may not intend to continue for an advanced degree. Both types will be required to take Anthropology 300A, 300B, 300C, 300D, and an additional nine hours of 400-level course work in anthropology.

Those students interested in advanced degrees will be advised to take Anthropology 400A, 400B, 400C, and 400D (total 12 hours) with the remainder of the hours as electives. It will also be made clear that graduate departments normally require at least one foreign language and some mathematical background.

Those students not interested in advanced study will be advised on an individual basis reflecting their own particular interests and aspirations.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements	15
Requirements for Major in Anthropology	32
Anthropology 300A, 300B, 300C, and 300D required, and an additional nine hours of 400-level course work in anthropology.	
Electives	28
Total	120

Minor

A minor in anthropology consists of at least 15 hours including at least two of the four courses: 300A, 300B, 300C, 300D, and a minimum of three of the remaining nine hours at the 400-level.

Courses

- 221-3 **The Anthropology of Sexual Behavior.** Introduces the student to general primate ethology where sexual behaviors are seen to be a function of band needs. Patterns of sexuality are then examined on a cross-cultural basis where attitudinal and cultural distinctions between men and women are related to socio-cultural needs and pressures. The course will conclude with an examination of modern western sexism.
- 231-3 **Folklore and Modern Life.** The folklore of a culture influences both the unconscious and conscious actions of people in subtle ways and each study helps to account for both the good and the bad which we see in ourselves and in others. The course introduces the student to the study of folklore and serves to emphasize the importance of the study of folk beliefs and their role in understanding our and other contemporary societies.
- 241-3 **Slaves and Slavery in New World Societies.** Focuses on slavery and slave systems in New World societies from a comparative historical and social anthropological/sociological perspective.
- 300A-3 **Advanced Introduction to Anthropology: Physical Anthropology.** Man as a biological being, his relationships to other living things. Evolutionary theory, human origins and development. Concept of race and the races of Man. Human genetics and variation.

300B-3 Advanced Introduction to Anthropology: Linguistic Anthropology. Introduces the concept of culture as revealed through human language. Provides both theory and methodology basic to linguistics and non-linguistic specialists within anthropology.

300C-3 Advanced Introduction to Anthropology: Archaeology. Theory and method of anthropological archaeology for non-majors and majors.

300D-3 Advanced Introduction to Anthropology: Socio-Cultural Anthropology. Ways in which humans organize themselves for action. Emphasis will be on the social anthropological approaches to problem definition and theory. Comparative and functional analysis of kinship, economic, political, religious, and legal systems of non-Western peoples.

304-3 Origins of Civilization. A study of complex environmental and cultural factors that led to a rise and fall of early high-cultures in both the Old and New Worlds. Prerequisite: consent of department.

310A-3 Comparative Ethnography of Specific Areas of the World: North America. Survey of the cultural history of North America north of nuclear Meso-America; comparison of major cultural areas and tradition on the basis of social and cultural institutions.

310B-3 Comparative Ethnography of Specific Areas of the World—Meso-America. The biological and cultural history of man in Meso-America.

310C-3 Comparative Ethnography of Specific Areas of the World—South America. An examination of socio-cultural evolution in South America. Emphasis will be on developments since the period of European contact in the areas of high civilization and tribal peoples. Modern strategic social adaptations and peasant movements will be discussed.

310D-3 Comparative Ethnography of Specific Areas of the World—Europe. The biological and cultural history of Man in Europe.

310E-3 Comparative Ethnography of Specific Areas of the World—Caribbean. Focuses on the social history, contemporary local institutions, and customs of Caribbean peoples. Emphasis is placed on Afro-American populations in the English- and French-speaking areas, although Dutch and Spanish areas are also treated, as well as populations of European and East Indian ancestry.

310F-3 Comparative Ethnography of Specific Areas of the World—Oceania. Ethnographic survey of Oceania including the indigenous inhabitants of Polynesia, Micronesia, Melanesia, and Australia. Historical coverage ranges from time of initial contact to the present day political, economic, and social organization.

310G-3 Comparative Ethnography of Specific Areas of the World—Sub-Saharan Africa. Focuses on the traditional societies and institutions of Black Africa from a comparative perspective; some attention is paid to pre-colonial history and contemporary socio-cultural issues in the modern nation-states of Sub-Saharan Africa.

310H-3 Comparative Ethnography of Specific Areas of the World—The Near East and North Africa. A survey of the archaeology, ethnohistory, linguistics, and ethnology of the peoples of the Near East and North Africa.

310I-3 Comparative Ethnography of Specific Areas of the World—Eastern Asia. A survey of the archaeology, ethnohistory, linguistics, and ethnology of the peoples of East Asia.

310J-3 Comparative Ethnography of Specific Areas of the World—South Asia. A survey of the archaeology, ethnohistory, linguistics, and ethnology of the peoples of South Asia.

310K-3 Comparative Ethnography of Specific Areas of the World—Southeast Asia. A survey of the archaeology, ethnohistory, linguistics, and ethnology of the peoples of mainland and insular Southeast Asia.

315-4 Ethnographic Film. A survey of the world's peoples and cultures through the medium of anthropological and documentary films. Elective Pass/Fail.

376-2 to 8 Independent Study in Classical Studies Program. (See Classical Studies 496.) Elective Pass/Fail.

400A-3 Current Problems in Anthropology-Physical Anthropology. The collection, analysis and interpretation of data on human populations. Problems in the study of human populations, including inbreeding, natural selection, fertility, drift and migration. Prerequisite: 300A for undergraduates or consent of instructor.

400B-3 Current Problems in Anthropology-Linguistic Anthropology. Presentation and discussion of ongoing developments in theory and methodology in linguistic anthropology. Prerequisite: 300B for undergraduates or consent of instructor.

400C-3 Current Problems in Anthropology-Archaeology. Detailed consideration of various aspects of current directions in archaeological method and theory. Prerequisite: 300C for undergraduates or consent of instructor.

400D-3 Current Problems in Anthropology-Socio-Cultural Anthropology. A survey of current problems in the description and analysis of non-Western social systems.

Emphasis is on kinship and social structure. Prerequisite: 300D for undergraduates or consent of instructor.

401-3 Language and Culture. Linguistics and the study of culture in relation to animal communication, language acquisition, linguistic typology and universals, ethno-semantic and sociolinguistics. Prerequisite: 300B for undergraduates or consent of instructor.

404-3 Technology and Anthropology. An introduction to the basic ways in which Man utilizes the natural resources of his habitat to meet his various needs, such as food, shelter and transportation. Consideration will be given to the types of materials used and the tools and appliances manufactured by non-Western peoples to meet their needs.

405-3 Art and Anthropology. The nature of art, its locus in culture, its integration in society as exemplified in world cultures.

406-3 Conservation Archaeology. The method and theory of archaeology in relationship to local, state, and federal laws regarding the protection and excavation of antiquities. Emphasis is on problem-oriented survey and excavation, as well as the preparation of archaeological contracts and the writing of reports to satisfy statutes involving environmental concerns. Prerequisite: 300C or 400C or consent of instructor.

409A-3 History of Anthropology-Physical Anthropology. The history of physical anthropology, with particular emphasis on the impact of nationalism, personality and social attitudes. Prerequisite: none. 300A recommended for undergraduates.

409B-3 History of Anthropology-Linguistic Anthropology. A survey of the history of anthropological linguistics with emphasis on anthropological contributions to the discipline and the historical development of specialized anthropological fields such as ethno-semantic, field techniques in language description, linguistic prehistory and other topics. Prerequisite: none. 300B recommended for undergraduates.

409C-3 History of Anthropology-Archaeology. An examination of the origin of scientific archaeology with emphasis on its development within the broader framework of anthropology. Stress will be given to anthropological archaeology, although the development of archaeology in the humanities will also be considered. Prerequisite: none. 300C recommended for undergraduates.

409D-3 History of Anthropology-Socio-Cultural Anthropology. The development of anthropological thought from the Age of Discovery to the present. The emphasis will be on an examination of the intellectual milieu which fostered general and specific conceptual views and methodologies. Prerequisite: none. 300D recommended for undergraduates.

410A-3 Advanced Topics in Socio-Cultural Anthropology-Applied Anthropology. The practical applications of theoretical social anthropology. Problems of directed culture change are examined from an anthropological perspective as they apply to the work of the educator, social worker, extension agent, administrator and others who are attempting to guide change in the life ways of others in Western culture and the third world. Prerequisite: none. 300D recommended for undergraduates.

410B-3 Advanced Topics in Socio-Cultural Anthropology-Educational Anthropology. An examination of the cultural processes of formal and informal education, the use of anthropological premises in educational program design, bicultural-bilingual education programs, comparative American/non-American systems, and the teaching of anthropology. Prerequisite: none. 300D recommended for undergraduates.

410C-3 Advanced Topics in Socio-Cultural Anthropology-Economic Anthropology. The study of non-Western economic systems. Prerequisite: none. 300D recommended for undergraduates.

410D-3 Advanced Topics in Socio-Cultural Anthropology-Folklore. A comparative study of the role of folklore in various cultures of the world, with emphasis upon nonliterate societies. Analysis of motifs, tale-types, themes and other elements; comparisons between nonliterate and literate groups. Prerequisite: none. 300D recommended for undergraduates.

410E-3 Advanced Topics in Socio-Cultural Anthropology-Law. Anthropological thought on imperative norms, morality, social control, conflict resolution and justice in the context of particular societies, pre-literate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: none. 300D recommended for undergraduates.

410F-3 Advanced Topics in Socio-Cultural Anthropology-Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of the "Great Religions". Prerequisite: none. 300D recommended for undergraduates.

410G-3 Advanced Topics in Socio-Cultural Anthropology—Cross-Cultural Studies of Personality. Similarities and differences in personality structures cross-culturally including the historical development of this as an anthropological subdiscipline. Prerequisite: none. 300D recommended for undergraduates.

410H-3 Advanced Topics in Socio-Cultural Anthropology-Ethnomusicology of Oceania, Asia and Africa. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Oceania, Asia and Africa.

410I-3 Advanced Topics of Socio-Cultural Anthropology-Ethnomusicology of Middle East, Europe and the New World. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Europe and the New World.

410J-3 Advanced Topics in Socio-Cultural Anthropology-Kinship and Social Organization. Universal features of non-Western systems of kinship terminology and social organization. Topics include the structure and functioning of kinship systems, lineages, clans, sibs, phratries, moieties, and tribal units. Prerequisite: none. 300D recommended for undergraduates.

420-3 to 9 Advanced Studies in Languages of the World. Attention given to language families, focusing on studies of linguistic history, genetic relationships, and typological classification. Any one semester will concentrate on language of a major geographical area. Prerequisite: 300B or 400B or consent of instructor.

430-3 to 9 (3 per topic) Advanced Studies in Regional Archaeology. Detailed study of the early cultures of specific world areas. Emphasis on the evolutionary cultural development of an area. Can be repeated to a total of nine credits if course involves different area. Prerequisite: 300C or 400C or consent of instructor.

440-3 Advanced Studies in Physical Anthropology. Hominid paleontology, human variation, anthropological genetics. Advanced analysis and discussion of the fossil evidence for human evolution, race, and human individual and population genetics. Prerequisite: 300A or 400A or consent of instructor.

450-2 to 6 (2 per topic) Museum Studies. (a) Methodology and Display (b) Preparatorship (c) Administration. The philosophical and educational aspects of museum administration, display, processing, cataloguing, and preservation.

460-1 to 12 (1 to 3 per semester) Individual Study in Anthropology. Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities.

496-1 to 8 Field School in Archaeology. Apprentice training in the field in archaeological method and theory. Offered during the summer. Students will be expected to be in full-time residence at the field school headquarters off campus. Prerequisite: consent of instructor.

510-2 to 6 (2 to 3 per topic) Seminar in New World Archaeology.

511-2 to 6 (2 to 3 per topic) Seminar in Meso-American Archaeology.

512-2 to 6 (2 to 3 per topic) Seminar in Old World Archaeology.

520-2 to 6 (2 to 3 per topic) Seminar in New World Ethnology.

521-2 to 6 (2 to 3 per topic) Seminar in Ethnology of Meso-America.

522-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Oceania.

523-2 to 6 (2 to 3 per topic) Seminar in Anthropology of Africa.

545-2 to 6 (2 to 3 per topic) Seminar in Anthropological Linguistics.

550-2 to 6 (2 to 3 per topic) Seminar in the Native Cultures of Latin America.

560-2 to 6 (2 to 3 per topic) Seminar in Comparative Social Organization.

562-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Contemporary Peoples.

565-2 to 6 (2 to 3 per topic) Seminar in Culture Change and Development.

567-2 to 6 (2 to 3 per topic) Seminar in Anthropological Theory and Method.

570-2 to 6 (2 to 3 per topic) Seminar in Art and Technology.

571-2 to 6 (2 to 3 per topic) Visual Anthropology.

575-2 to 6 (2 to 3 per topic) Seminar in the Individual and Culture.

576-2 to 6 (2 to 3 per topic) Seminar in Anthropological Research Design.

581-2 to 6 (2 to 3 per topic) Seminar in Anthropology.

582-1 to 12 (1 to 3 per semester) Problems in Archaeology.

584-1 to 12 (1 to 3 per semester) Problems in Cultural Anthropology.

585-1 to 12 (1 to 3 per semester) Readings in Anthropology.

595-4 (2, 2) Field Methods in Ethnology.

596-4 (2, 2) Field Methods in Archaeology.

597-1 to 12 (1 to 6 per semester) Fieldwork in Anthropology.

599-1 to 6 Thesis.

600-1 to 32 (1 to 12 per semester) Dissertation.

Architectural Technology (Program, Major, Courses)

The continuing growth of the architectural profession requires large numbers of technicians whose training has provided a firm foundation for supporting

roles in today's profession and the basis for skill development in emerging activities. The architectural technology program offers this training in a curriculum designed to produce the skills in highest demand in the market for newcomers to the profession. Appropriate general studies and field trips to architects' offices and projects supplement the technical offerings.

The intelligent, motivated student with mathematical, artistic, or manual skill will be most successful in the program. He should be prepared to spend about \$150.00 for equipment, supplies, and field trips.

Architects who hold professional degrees and have many years of professional and teaching experience constitute the faculty. The program has the official approval of the American Institute of Architects.

An advisory committee whose members are practicing architects chosen for their understanding of today's needs in the profession and their interest in education assists the faculty in maintaining a current curriculum. Members currently serving of the advisory committee are: Edward Bartz, Hellmuth-Obata and Kassabaum, Inc., Belleville; William E. Gramley, Phillips-Swager and Associates, Peoria; Frederick W. Salogga, Spangler-Beall-Salogga-Bradley, Decatur; and William Stein, Fischer-Stein Associates, Inc., Carbondale.

The graduate will have an understanding of the design professions, design and production processes, and other components of the construction industry. His usual point of entry into the profession is as a draftsman producing construction drawings. As he gains experience he may develop his capabilities to accept more responsibility in such areas as project coordination, specification writing, estimating, various types of engineering, construction inspection, architectural design, and presentation.

There are also nonprofessional opportunities in the construction industry with manufacturers, material suppliers, contractors, and developers.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Architectural Technology

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b, 153a,b	14
Architectural Technology 111, 112, 113, 124, 125, 214, 215, 216, 217, 218, 220, 224, 225, 226, 229	60
<hr/> Total	<hr/> 77

Courses

111-7.5 Architectural Drafting. Use of drafting instruments, lettering and linework; geometric construction, projections, sections and intersections; pictorial drawing, perspective, shades and shadows, and reflections. Lecture three hours. Laboratory nine hours.

112-3.5 Architectural Graphics. Freehand drawing; various techniques in black and white media; theory and use of color; delineation techniques in various color media. Lecture one hour. Laboratory five hours.

113-2 Architectural History. Study of influences upon, and ensuing development of architecture from the earliest examples to the present; review of the development of architectural practice to its current state. Lecture two hours.

124-6 Architectural Drawings I. Introduction to basic materials and components used in contemporary construction. A survey of manufacturing methods, available sizes, performance characteristics, quality, finishes and applications. Usage of vendor's brochures and standard references. Preparation of working drawings in light frame construction to practice current procedures, dimensioning, notation, design, correlation, with standard and creative detailing. Lecture three hours. Laboratory six hours. Prerequisite: 111.

125-4 Architectural Design I. Problem solving techniques in architectural design with emphasis on basic design principles, human scale, composition and presentation. Architectural problems of relatively small scope and simple nature; and introducing factors of circulation and environmental control. Lecture one hour. Laboratory five hours. Prerequisite: 111, 112, 113. For interior design curriculum, 111, Interior Design 381, 390.

214-6 Architectural Drawings II Continuing study of materials and practice in document preparation for construction of non-complex buildings using framing methods appropriate to various occupancy classifications. Investigation and use of local, state, and federal codes regulating health and safety. Construction techniques relating to criteria of permanence, low maintenance and budget requirements. Working drawings for low-rise buildings of commercial, industrial, educational, professional, or institutional character. Lecture three hours. Laboratory six hours. Prerequisite: 124.

215-4 Architectural Design II. Continuing study of architectural design in application of principles to projects of increased scope and complexity, with attention to research, site planning, and comprehensive feasibility. Presentations in various media. Lecture one hour. Laboratory five hours. Prerequisite: 125.

216-4 Architectural Engineering I. Elementary study of forces and force systems using graphical and mathematical solutions. Basic engineering concepts. Reactions, shear and moment diagrams. Axial, bending, and eccentric loading on beams and columns. Application of principles in design with wood, steel, and concrete. Floor and roof support systems using dead and live load calculations. Lecture four hours. Prerequisite: School of Technical Careers 105a,b, 107a,b.

217-2 Architectural Systems. Basic principles dealing with mechanical and electrical equipment of buildings. Familiarization with water supply and sanitation systems. Fundamentals of properties of heat, sources and transmission of various heating systems, air conditioning and purification systems. Introduction to vertical and horizontal transportation systems. Fundamentals of illumination and electrical systems. Fundamentals of acoustics and appropriate materials for reflection, attenuation, and isolation. Lecture two hours. Prerequisite: School of Technical Careers 107a,b.

218-3 Site Engineering. Use of surveyor's tape, transit, and level. Fundamentals of topography, area and volume calculations, site planning, and building layout. Lecture one hour. Laboratory three hours. Prerequisite: School of Technical Careers 105a,b.

220-2 Architectural Specifications. Function of specifications as a contract document. The relationship of specifications to architectural drawings. Organization and format. Content of various sections. Lecture two hours. Prerequisite: fourth semester status.

224-6 Architectural Drawings III. Continuing study of materials and practice in document presentation for construction of high-rise buildings of a more complex nature. Contemporary materials, components, and systems. Steel and concrete framing systems using short and longspan steel joists, steel pans, pre and post tensioned precast components. Correlation with electrical, mechanical, and structural work. Lecture three hours. Laboratory six hours. Prerequisite: 214.

225-4 Architectural Design III. Continuing application of architectural design principles and procedures to projects of higher factor of usage, or greater scope and complexity of function and circulation. Continuing practice in presentation with various media. Lecture one hour. Laboratory five hours. Prerequisite: 215.

226-4 Architectural Engineering II. Continuing study of structural framing materials and systems. Design and investigation of framing components of wood, steel, and concrete. Usage of wood, steel, and concrete handbooks. Standard connections and fastening methods. Concrete design, quality control, and field inspection. Beams, columns, lintels, foundations, footings, and retaining walls. Lecture four hours. Prerequisite: 216.

229-2 Architectural Estimating. Estimating methods. Material lists and quantities. Material and labor costs. Factors affecting costs. Lecture two hours. Prerequisite: School of Technical Careers 105a,b.

Art (School, Major, Courses)

Undergraduate offerings in art provide both introductory and specialized experiences. The course of study offered, leading to the Bachelor of Arts degree with a major in art, offers the student the opportunity to specialize in drawing, painting, printmaking, sculpture, ceramics, metalsmithing, weaving, art education, art history, or general studio. The specialization in art education requires 51 hours in art. The specialization in art history requires 58 hours in art. The specialization in general studio requires 52 hours in art, and all other specializations require 72 hours in art.

Bachelor of Arts Degree, College of Communications and Fine Arts

A student majoring in art should select one of the following fields of interest by the end of his sophomore year: drawing, painting, printmaking, sculpture, ceramics, metalsmithing, weaving, art education, art history, or general studio.

ART MAJOR—DRAWING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Drawing</i>	72
Art 100	8
Art 200, 201, 203	6
Art 204, 205, 206 (choice of one)	2
Art 107, 207, electives in art history	12
Art 301	8
Art 300	8
Art 400	12
Art electives	16
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—PAINTING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Painting</i>	72
Art 100	8
Art 200, 201, 203	6
Art 204, 205, 206 (choice of one)	2
Art 107, 207, electives in art history	12
Art 300	8
Art 301	8
Art 401	12
Art electives	16
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—PRINTMAKING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Printmaking</i>	72
Art 100	8
Art 200, 201, 203	6
Art 204, 205, 206 (choice of one)	2
Art 107, 207, electives in art history	12
Art 300	4
Art 301	4
Art 302	8
Art 402	12
Art electives	16

<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—SCULPTURE SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Sculpture</i>	72
Art 100	8
Art 200, 201, 203, 204, 205	10
Art 107, 207, electives in art history	12
Art 300	4
Art 303	8
Art 403	12
Art electives	18
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—CERAMICS, METALSMITHING, OR WEAVING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Ceramics, Metalsmithing, or Weaving</i>	72
Art 100	8
Art 200, 201, 203, 204, 205, 206	12
Art 107, 207, electives in art history	12
Art 300	8
Art 303	4
Studio specialization	20
Ceramics: Art 304, 404	
Metalsmithing: Art 305, 405	
Weaving: Art 306, 406	
Art electives	8
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—ART EDUCATION SPECIALIZATION.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Art Education</i>	51
Art 100	8
Art 200, 201, 203, 204, 205, 206	12
Art 107, 207, electives in art history	9
Art 308, 318, 328, 338	12
Art electives	10
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Total</i>	120

ART MAJOR—ART HISTORY SPECIALIZATION

<i>General Studies Requirements</i>	49
GSC 207 and 8 hours of foreign language (French or German); 4 hours of the foreign language will not count toward General Studies requirements.	
<i>Requirements for Major in Art Specialization</i> <i>in Art History</i>	58
Art 107	2
Art 207, 217	6
Art 307, 317, 327, 337, 347	15
Art 407, 417, 427, 437, 447	15
Studio	20
Art 100, 12 hours beyond 100-level	
<i>Electives</i>	13
<i>Total</i>	120

ART MAJOR—GENERAL STUDIO SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization</i> <i>in General Studio</i>	52
Art 100	8
Art 200, 201, 203, 204, 205, 206	12
Art 107, 207, electives in art history	12
Art electives	20
<i>Electives</i>	23
<i>Total</i>	120

Minor

A total of 16 hours constitutes a minor. A total of 8 hours must be taken in Art 100. The student may elect to take any 200 level courses until the 16-hour requirement is satisfied.

Courses

Art education courses:	308, 318, 328, 348, 408, 418, 428, 508, 518,
Art history courses:	107, 207, 217, 307, 317, 327, 337, 347, 407, 417, 427, 437, 447, 507, 517
Studio courses:	100, 200, 201, 203, 204, 205, 206, 300, 301, 302, 303, 304, 305, 306, 400, 401, 402, 403, 404, 405, 406, 414, 500, 501, 502, 503, 504, 505, 506, 514, 599
Independent study courses:	258, 259, 309, 319, 499

100-8 (4, 4) Basic Studio. Introduction to fundamental technical process and conceptual experiences in art. (a) Two-dimensional art, (b) Three-dimensional art. Incidental expenses will be at least \$15.00 per semester. Note: 100a or b not sequential.

107-2 Fundamentals of Art. Basic experiences in the vocabulary, language, and theory of art.

200-2 Beginning Drawing. Course work to emphasize experience in materials, tech-

- niques, processes, and ideas fundamental to the discipline of drawing. Incidental expenses will be at least \$10.00. Prerequisite: 100a, 107.
- 201-2 Beginning Painting.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of painting. Incidental expenses will be at least \$25.00. Prerequisite: 100a, 107.
- 203-2 Beginning Sculpture.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of sculpture. Incidental expenses will be at least \$25.00. Prerequisite: 100b, 107.
- 204-2 Beginning Ceramics.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of ceramics. Supplies and materials will be \$20.00. Incidental expenses will be at least \$10.00. Prerequisite: 100b, 107.
- 205-2 Beginning Jewelry and Metalsmithing.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of jewelry and metalsmithing. Supplies and materials will be \$15.00. Incidental expenses will be at least \$15.00. Prerequisite: 100b, 107.
- 206-2 Beginning Weaving.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of weaving. Supplies and materials will be \$20.00. Incidental expenses will be at least \$10.00. Prerequisite: 100b, 107.
- 207-4 Survey of Art History.** A comprehensive survey of painting, sculpture, and architecture from prehistoric to present times.
- 217-2 Methodology of Art History and Criticism.** Lecture, discussion, and presentation of the research tools of art history, art historical logic, and the methods of art criticism. Prerequisite: restricted to students specializing in art history.
- 258-1 to 30 Work Experience.** Credit for work performed which is related to the student's educational objective. Credit to be granted by departmental evaluation. Mandatory Pass/Fail.
- 259-2 to 16 Transfer Credit.** Credit to be given for course work granted by any accredited educational institution, or vocational institution. Prerequisite: any work accepted for transfer credit in art must be granted with the approval of the appropriate faculty.
- 300-4 to 8 (4, 4) Intermediate Drawing.** Use of technique, materials, and processes to develop a visual language in a personal way. Incidental expenses will be at least \$15.00 per semester. Prerequisite: 200.
- 301-4 to 8 (4, 4) Intermediate Painting.** Use of technique, materials, and processes to develop a visual language in a personal way. Incidental expenses will be at least \$30.00 per semester. Prerequisite: 201.
- 302-12 (4, 4, 4) Beginning Printmaking.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to printmaking. (a) Etching: metal plate and constructive surface printing. Intaglio, metal, cardboard plate reliefs and collograph. (b) Lithography: introduction into plate and stone, including printing in black and white and color. (c) Introduction to silkscreen; photo methods, hand cut stencils and direct drawing. May be taken in any sequence. Supplies and materials will be \$25.00 per semester per student. Incidental expenses will be at least \$15.00 per semester. Prerequisite: 100a and b, 107.
- 303-8 (4, 4) Intermediate Sculpture.** (a) Studio-practical and theoretical in figure modeling, mold-making, and reproduction processes. (b) Studio-practical and theoretical in metal casting, foundry technology, and metal fabrication. Incidental expenses will be at least \$25.00 per semester. Prerequisite: 203.
- 304-8 (4, 4) Ceramics-Intermediate.** (a) Techniques: glaze calculation, body formulation, and aesthetic evaluation. (b) Use of techniques, materials, and processes to develop a visual language in a personal way. Supplies and materials will be \$20.00 per semester. Incidental expenses will be at least \$10.00 per semester. Must be taken in a,b sequence. Prerequisite: 204.
- 305-8 (4, 4) Jewelry-Intermediate.** (a) Techniques in forming, fabrication, i.e., repoussé, chasing, and die forming. (b) Use of techniques, materials, and processes to develop a visual language in a personal way. Supplies and materials will be \$15.00 per semester. Incidental expenses will be at least \$15.00 per semester. Must be taken in a,b sequence. Prerequisite: 205.
- 306-8 (4, 4) Weaving-Intermediate.** (a) A study of techniques of weaving including floor loom, harness loom, and hand spinning. (b) Use of techniques, materials, and processes to develop a visual language in a personal way. Supplies and materials will be \$20.00 per semester. Incidental expenses will be at least \$10.00 per semester. Must be taken in a, b sequence. Prerequisite: 206.
- 307-3 Ancient Art.** Painting, sculpture, architecture, and the crafts from Ancient Egypt, Mesopotamia, the Aegean, Greece, and Rome.

308-3 Theories and Philosophies of Art Education. Students are expected to show an understanding of philosophies and theories, general trends in art education programs and teaching methods, perceptual and psychological developments of children, adolescents, and adults via book and periodical evaluations, preparation of a term paper, lectures, discussions, and a self-instruction center tape-slide series.

309-2 to 12 Independent Study. To be used by majors in the School of Art to pursue independent research activities. Incidental expenses will be dependent upon the nature of the activity. Prerequisite: completion of all 100 and 200 level requirements in major area and consent of instructor.

317-3 Medieval Art. Painting, sculpture, and architecture from the Fall of Rome through the Gothic period.

318-3 Curriculum and Administration in Art Education. Covers curricula, budgets, liaison with administrative community and professional organization. Also includes the design and development of learning environment. Incidental expenses will be at least \$10.00.

319-9 (3, 3, 3) Art Studio for Non-Majors. (a) Drawing, (b) Painting, (c) Printmaking, (d) Sculpture, (e) Ceramics, (f) Jewelry, (g) Fibers. Courses need not be taken in sequence. Incidental expenses will be at least \$10.00 per semester.

327-3 Renaissance Art. Painting, sculpture, and architecture in Italy and Northern Europe during the Renaissance period and its culmination in 16th Century Mannerist art.

328-3 Art Education Methods for Elementary and Secondary Schools I. Methods in art education as they pertain to the professional art teacher in elementary and secondary schools. Incidental expenses will be at least \$20.00.

337-3 17th and 18th Century Art. Painting, sculpture, and architecture in Europe from the Baroque period to the French Revolution.

338-3 Art Education Methods for Elementary and Secondary Schools II. Methods of basic graphic and commercial art concepts as applied to elementary and secondary schools. Incidental expenses will be at least \$20.00.

347-3 American Art to World War II. Painting, sculpture, and architecture in the United States from the Colonial period to 1945.

348-3 Fundamental Studies in Art Media, Curriculum and Philosophies.

400-2 to 16 Drawing I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-300-8. Graduates-consent of major adviser in appropriate art discipline.

401-2 to 16 Painting I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-301-8. Graduates-consent of major adviser in appropriate art discipline.

402-2 to 16 Printmaking I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-302-8. Graduates-consent of major adviser in appropriate art discipline.

403-2 to 16 Sculpture I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-303-8. Graduates-consent of major adviser in appropriate art discipline.

404-2 to 16 Ceramics I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-304-8. Graduates-consent of major adviser in appropriate art discipline.

405-2 to 16 Metalsmithing I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-305-8. Graduates-consent of major adviser in appropriate art discipline.

406-2 to 16 Weaving I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-306-8. Graduates-consent of major adviser in appropriate art discipline.

407-3 19th Century Art. Painting, sculpture, and architecture in Europe from the French Revolution to the *Fin de Siecle*.

408-2 to 9 (2 to 3, 2 to 3, 2 to 3) Basic Research in Art Education. Each student demonstrates via class presentation, term papers and answers to exam question, a knowledge of basic research techniques and applications; important literature in the field of art education; broad research meanings; a theory of art education and material on behavioral objectives presented in class and via tape-slide self instruction programs.

414-2 to 16 Glassblowing I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and

ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-consent of instructor.

417-3 20th Century Art to World War II. Painting, sculpture, and architecture in Europe from the turn of the Century to 1945.

418-2 to 9 (2 to 3, 2 to 3, 2 to 3) Individual Teaching Methods. Each student demonstrates an understanding of individual teacher-directed self-evaluative teaching methods involving studio projects, teacher-student evaluative sessions, individual projects, lecture-discussions and a term paper. Incidental fee \$20.00 maximum.

427-3 Art Since 1945. Painting, sculpture, and architecture since World War II. Main emphasis on the shift of artistic innovation from western Europe to the United States.

428-3 Individual Problems in Art Education for Elementary Education Majors. Individual concentration on one studio discipline and its application to pre-school, elementary education, early childhood and special education. Incidental expenses will be at least \$20.00. Prerequisite: 348a.

437-3 Esthetics of the Visual Arts. General survey of historical and contemporary philosophies of the beautiful with particular emphasis upon their application to visual works of art.

447-3 Museology. A survey of museum and gallery techniques. Prerequisite: restricted to art majors.

457-3 Women in the Visual Arts. Consists of lecture, discussion, and research in the following areas: women artists in history and the contemporary art world, the image and symbolism of the female form, women as art patrons, and women in photography, film, crafts, and architecture.

499-2 to 16 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Designed to adapt to student's individual needs in problem research. Can be used for interdisciplinary program flexibility. Prerequisite: consent of instructor.

500-2 to 16 Drawing II.

501-2 to 16 Painting II.

502-2 to 16. Printmaking II.

503-2 to 16 Sculpture II.

504-2 to 16 Ceramics II.

505-2 to 16 Metalsmithing II.

506-2 to 16 Weaving II.

507-3 to 6 (3, 3) Readings in Art History.

508-2 to 9 (2 to 3, 2 to 3, 2 to 3) Research in Art Education.

514-2 to 16 Glassblowing II.

517-3 to 6 (3, 3) Concepts in Art History.

518-2 to 9 (2 to 3, 2 to 3, 2 to 3) Seminar in Art Education.

599-2 to 6 Thesis.

Asian Studies (Minor, Courses)

The Asian Studies program includes a variety of courses on the languages, civilizations, and contemporary issues of Asia. The program is intended to prepare a student for a number of career options with Asia interests. Through this program, a student may prepare for more advanced work on another campus, may develop a teaching specialty, or may broaden his repertoire of skills and knowledge which would be useful for his professional and occupational interests in Asia.

A minor in Asian studies requires a minimum of 20 hours selected from a list of approved courses. Not more than eight hours may be taken in any one department for credit toward the 20 hours.

A student may major in Asian studies by means of the special major program of the University for the Bachelor of Arts degree. The student in this program has to meet University, General Studies, and the College of Liberal Arts requirements. The student's special major would not be approved unless he completes at least 30 hours selected from a list of approved courses with at least three disciplines included. Students interested in this program are encouraged to take at least two years of an Asian language.

Courses

321-3 Survey of Vietnamese Literature. (Same as Linguistics 321.) Readings and analysis of selected works of Vietnamese literature from the beginning to the present time.

395-6 (3, 3) Cultural Traditions of Indochina. Development of cultural traditions in the Indochinese peninsula from early to modern times. Emphasis on the literary, social, historical, religious, and philosophical traditions that have shaped the cultures of Vietnam, Laos, and Cambodia. (a) Vietnam; (b) Laos and Cambodia.

Automotive Technology (Program, Major, Courses)

The focus of automotive technology at the School of Technical Careers is to provide immediate occupational acceptance with rapid career advancement in the allied areas of service, management, and marketing in either dealerships or in salaried positions for the various manufacturers.

The sequence of studies is carefully planned and consists of both technical and general studies courses, complemented by specific activities in well-equipped laboratories for the development of precise technical skills to assist in job entry.

The general studies requirements furnish an excellent base for those aspiring to higher degrees, thus enabling the student to attend one of the very few schools in the entire nation offering the option of either technical or teacher training programs.

Instructional media such as visual aids, reference materials, laboratory guides, operating units, and equipment for dynamic testing are used to supplement learning.

The objective is to develop a comprehensive understanding of principles of operation that will orient the student to the likeness of various units providing the same function rather than the isolated differences.

Additional expertise is provided the program through an advisory committee made up of persons chosen for their knowledge of the field and interest in education. Current members are: Al Bradshaw, supervisor of service training, Chrysler Training Center, Hazelwood, Missouri; Kenneth James, Buick resident instructor, General Motors Training Center, St. Louis, Missouri; James Racz, Eddie Ruch Pontiac, Inc., Wheaton; Don Vogler, Vogler Motor Sales, Carbondale; and Eric E. Swanstrom, service manager, Ford parts division, Ford Marketing Corp., St. Louis, Missouri.

The student should expect to spend about \$200.00 for tools and supplies.

Prerequisites for success in this field are average physical abilities, an active curiosity, and the ambition to properly match that curiosity.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Automotive Technology

GSD 101, 153	5
School of Technical Careers 102, 105a, 107a,b, 108	10
Automotive Technology 101, 102, 103, 104, 105, 106, 115, 121, 122, 123, 124, 125, 126, 201, 202, 203, 204, 205, 206, 221, 222, 223, 224, 225, 226	62
Total	77

Courses

101-3 Basic Automotive Engines Laboratory. Enables the student to learn the fundamental service techniques and procedures required to service current automotive engines through meaningful "hands on" experience on "live" engines. The student will disassemble laboratory engines, inspect for wear and damage, and reassemble the engine to operating condition according to manufacturers specification. Laboratory will be 14 clock hours per week for five weeks. Prerequisite: concurrent enrollment in 121.

102-3 Advanced Automotive Engine Laboratory. Allows the student to develop those skills and service techniques that are considered essential to perform quality engine repair. Service operations such as valve refacing, valve guide knurling, bearing fitting, and piston reconditioning are examples of activities that will be performed on "live" vehicles scheduled for this purpose. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: 101, 121 and concurrent enrollment in 122.

103-3 Automotive Brake System Laboratory. The student will be introduced to this service activity through a thorough exposure of the fundamental service procedures required of all current brake systems. He will upon completion of the course be able to perform complete service to the system which will include machining of brake drums and rotors, contour grinding of linings, rebuilding of master cylinders, wheel cylinders, and power brake units. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 123.

104-3 Automotive Chassis and Suspension Laboratory. Designed to provide the student with a wide variety of meaningful experiences performing the various chassis and suspension service operations on live vehicles. The activities will include common operations such as: wheel balancing, ball-joint and chassis component part replacement, front wheel alignment, manual and power steering repair. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 124.

105-3 Automotive Engine Electrical Laboratory. Focuses primarily on the diagnosis and service of automobile charging and starting systems. Specific emphasis will be placed on helping the student develop sound diagnostic techniques and procedures so that he can easily locate mal-functioning units. The student will also be given detailed instruction on the approved service procedures for the adjustment, light repair, and overhaul of cranking motors, starter solenoids, alternators, both conventional and integral and voltage regulators both conventional and transistorized. Laboratory will be 14 clock hours per week for five weeks. Prerequisite: concurrent enrollment in 125.

106-3 Automotive Fuel and Ignition Laboratory. Enables the student to obtain a wide variety of actual work experience in the diagnosis and repair of automotive fuel and ignition systems. The student will be given specific instruction regarding the adjustment, light repair, and overhaul of carburetors, distributors, and other repairable components. Also, a considerable portion of this course will be devoted to the proper use of electronic test equipment such as oscilloscopes, tach-dwell units and exhaust gas analyzers in diagnosis of fuel and ignition problems. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 126.

115-2 Related Shop Laboratory. Provides the student with an opportunity to learn and perform routine service operations and small repairs that are required of all automotive service personnel. Such topics as thread repairs, fasteners, drill sharpening, broken stud removal, copper and brass fitting identification and fabrication, and basic acetylene welding and brazing are examples of some of the course content. Theory-laboratory will be four clock-hours per week for eight weeks.

121-2 Basic Automotive Engine Theory. Deals with the theory of operation and design characteristics of the four-stroke gasoline engine. The four-stroke cycle, basic carburetion and ignition; horsepower and torque computation; crankshaft and camshaft and engine clock design are examples of some of the topics to be covered. Theory will be six clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 101.

122-2 Advanced Automotive Engine Theory. The major emphasis is to identify and apply those theories and principles that are directly related to service operations, diagnosis and repair of mechanical malfunctions of engines. Such topics as bearing failure, valve failure, identification of engine noises are examples of some of the topics to be covered. Theory will be six clock-hours per week for five weeks. Prerequisite: 101, 121 and concurrent enrollment in 102.

123-2 Automotive Brake System Theory. Deals specifically with those theories and physical laws of hydraulics and pneumatics and their application to the modern automotive brake systems. Emphasis will be placed on how the various brake components operate by demonstrating fundamental principles as much as possible. This will make the service and diagnosis of the brake system more meaningful and allow the student to adapt easily to new applications. Theory will be six clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 103.

124-2 Automotive Chassis and Suspension Theory. Geared specifically to presenting the theoretical aspects and principles of operations of those chassis and suspension

components that are serviced in 104. The major emphasis of this course will be in aiding the student in developing a sound fundamental knowledge of steering geometry, principles of wheel balancing and applying hydraulic principles in the operation of power steering units and pumps. Theory will be six clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 104.

125-2 Automotive Engine Electrical Theory. Provides the student with an opportunity to learn the fundamental theories of electricity and to apply these fundamentals in the operation of cranking motors, solenoids, relays, alternators, generators and voltage regulators. Covers all present cranking, charging circuits and transistorized voltage regulators. Theory will be six clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 105.

126-2 Automotive Fuel and Ignition Theory. Permits the student to develop a thorough understanding of the fundamental operating principles of modern carburetion and ignition systems. Fuel system components will be totally analyzed in terms of basic functions, and each studied in detail. The ignition system, both conventional and electronic, will be presented in much the same manner, that is, stressing the basic principles and demonstrating the application. Upon completion of the course the student will be sufficiently prepared to engage in the more advanced study of emission control systems. Theory will be six clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 106.

201-3 Basic Automatic Transmissions Laboratory. Permits the student to acquire a great deal of practical experience in the fundamental service procedures required of all automatic transmissions. These fundamental procedures include transmission disassembly, inspection, clearance measurements and reassembly. The student will also have an opportunity to measure the performance of the transmissions he services on a transmission dynamometer. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 221.

202-3 Advanced Automatic Transmission Laboratory. Deals specifically with the advanced study of overhaul procedures and diagnosis applicable to all automatic transmissions used in American passenger cars. Typical malfunctions will be demonstrated with operational units through the use of a transmission dynamometer. The adjustment, light repair, and overhaul of "live" transmissions will be an integral part of the course. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: 201, 221, and concurrent enrollment in 222.

203-3 Automotive Power Accessories Laboratory. Assists the student in developing a comprehensive understanding of the diagnostic and repair procedures required of the various comfort options and electrical accessories commonly found on current production automobiles. Proper diagnosis of malfunctions through the use of electrical test equipment will be emphasized. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: 105, 125 and concurrent enrollment in 223.

204-3 Automotive Air Conditioning Laboratory. Provides the student with an opportunity to obtain practical experience in the actual service and diagnostic procedures required of all current air conditioning systems. Service activities presented will consist of all operations required of the refrigeration system including compressor rebuilding, the diagnosis and repair of factory-equipped systems, and automatic temperature control system diagnosis. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: 105, 125, and concurrent enrollment in 224.

205-3 Automotive Emission Control Laboratory. Allows the student to obtain meaningful "hands on" work experience in the service and diagnosis of emission control systems. The instruction will include the use of electronic test equipment such as oscilloscopes, exhaust gas analyzers, infra-red tester, plus the student will be able to perform emission tests to vehicles under load through the use of a chassis dynamometer. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: 105, 106, 125, 126 and concurrent enrollment in 225.

206-3 Automotive Drive Trains Laboratory. Enables the student to obtain valuable experience in the actual service and diagnosis of automotive drive line components. The service activities such as overhaul procedures for three and four speed manual transmissions, clutch service, universal joint repair, drive line angle measurement, and complete differential repair using pinion depth locating instruments will be included. Laboratory will be 14 clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 226.

221-2 Basic Automatic Transmissions Theory. Focuses primarily on the principles of operation and application of the various components that are common to current production automatic transmissions. Topics such as planetary gear set design, torque converters, clutching and hydraulic fundamentals are examples of what will be presented in detail. Upon completion of this course the student will have sufficient background in this area to apply these principles to the in-depth study of oil circuitry and diagnosis. Theory will be six clock-hours for five weeks. Prerequisite: concurrent enrollment in 201.

222-2 Advanced Automatic Transmission Theory. Geared specifically to presenting the valving and hydraulic oil circuitry of those transmissions that will be studied in the 222 laboratory course. Once the student has mastered the oil circuitry and component application, diagnostic procedures become more meaningful, and he will find it much easier to keep current. Theory will be six clock-hours per week for five weeks. Prerequisite: 201, 221, and concurrent enrollment in 202.

223-2 Automotive Power Accessories Theory. Allows the student to obtain a sound understanding of the theory of operation of the various electrical accessories and popular comfort options. Examples of units studied are: power windows, power seats, windshield wiper motors, dash instruments, heated rear windows, and warning buzzer systems. Assisting the student to interpret electrical wiring diagrams will be emphasized. Theory will be six clock-hours per week for five weeks. Prerequisite: 105, 125 and concurrent enrollment in 203.

224-2 Automotive Air Conditioning Theory. Allows the student to obtain in-depth instruction in the fundamental principles of refrigeration system which are applicable to all current systems, plus the theory of operation of the various controls used on factory installed units and automatic temperature control systems. Such topics as the refrigeration cycle, temperature regulation, anti-frost controls, air flow distribution and the electrical and vacuum controls are examples of the material studied. Theory will be six clock-hours per week for five weeks. Prerequisite: 105, 125 and concurrent enrollment in 204.

225-2 Automotive Emission Control Theory. Deals specifically with the theory of operation of the various controls, hardware and complete systems used to reduce exhaust emissions. All systems used on American passenger cars since 1968, plus retro-fit systems used on older models will be covered in detail. The recent Federal laws concerning automotive emissions and standards will also be a major topic of the course. Theory will be six clock-hours per week for five weeks. Prerequisite: 105, 106, 125, 126, and concurrent enrollment in 205.

226-2 Automotive Drive Trains Theory. Assists the student in developing a thorough understanding of the fundamental theories and principles of operation of the various drive train components that are serviced in 206. Examples of topics to be presented are: principles of synchronizer operation, power flow of three and four speed manual transmissions, manual clutch design, conventional and limited slip differential operation, and conventional and constant velocity type universal joints. Theory will be six clock-hours per week for five weeks. Prerequisite: concurrent enrollment in 206.

Aviation Technology (Program, Major, Courses)

Skilled technicians are in demand in the aviation industry, both in airlines and general aviation. The industry demands men who possess a wide range of knowledge and ability provided by general education as well as special technical training.

The student learns reciprocating and jet powerplants, hydraulics, fuel systems, ignition-starting systems, carburetion and lubricating systems, instruments, and powerplant testing in coordinated classroom and laboratory work. The program is fully accredited by the Federal Aviation Administration. Students who wish to qualify for the FAA airframe and powerplant license are required to take a two-course post-associate specialization.

Instruction is conducted at the Southern Illinois Airport between Carbondale and Murphysboro in a combination laboratory-classroom-hangar facility.

The student should expect to spend about \$225.00 for his tool kit and special study materials.

Executives in the aviation industry constitute an advisory committee which serves the program. Current members are: Walter D. Allen, manager of commercial marketing, Pratt & Whitney Aircraft, East Hartford, Connecticut; Raoul Castro, manager, aviation department, MARCO Flight Operations, Chicago; John P. Davis, assistant vice president for maintenance, Delta Air Lines, Atlanta, Georgia; Roy S. Davis, general foreman for maintenance, TransWorld Airlines, O'Hare International Airport, Chicago; Joseph Goetz, senior captain, TransWorld Airlines, Kennedy Airport, New York, New York;

Howard D. Gould, management consultant for personnel and industrial relations, Industrial Race Relations Associates, Chicago; Robert J. Graham, supervisor of production control, American Airlines, O'Hare International Airport, Chicago; A. E. Jordan, vice president for technical services, TransWorld Airlines, Kansas City International Airport, Kansas City, Missouri; R. J. Miesse, manager of personnel, midwest region, United Air Lines, O'Hare International Airport, Chicago; C. S. Nicely, manager, training division, Douglas Aircraft Co., Long Beach, California; E. J. Schuett, senior director, TransWorld Airlines, Kansas City, Missouri; John S. Winter, president Systron Donner Corp., Berkeley, California; Frank H. Wood, foreman of aircraft maintenance, United Air Lines, O'Hare International Airport, Chicago; and Phillip S. Woodruff, manager of aviation education, marketing division, Cessna Aircraft Co., Wichita, Kansas.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Aviation Technology

GSB 202	3
GSD 101, 153	5
School of Technical Careers 102, 105a	4
Aviation Technology 110, 111, 112, 113, 201, 203, 204, 205, 210, 211, 212, 214, 215, 216	65
Elective (in Social Science)	2

Total 79

Courses

110-4 Aircraft Structure-Fabrication and Repair. The student will be able to identify and select materials employed in aircraft construction. Using appropriate FAR's, he will demonstrate competence in repair of honeycomb, fiberglass, welded, wood, or fabric aircraft members. The student will inspect aircraft members for defects and, if necessary, inspect completed repairs for airworthy condition.

111-5 Materials and Metal Processing. The student will be able to identify, select, and inspect aircraft hardware and materials. He will be able to select and apply appropriate cleaning materials and to implement corrosion controls. He will become proficient in the use of precision measurement equipment and related inspection tools. He will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. He will be required to demonstrate correct use and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43.13-1 pertaining to materials and methods.

112-4 Aircraft Electricity. The student will have basic knowledge of electricity generation, AC and DC circuitries, and controls. He will be able to solve problems associated with electrical measurement (AC and DC), circuit interpretations and inspection, aircraft electrical load analysis, circuit malfunctions, and circuit or component servicing. He will have as an introduction, a basic knowledge of aircraft electronics.

113-5 Aircraft Instruments and FAR. The student will have a knowledge of operation, installation, marking, and interpretation of synchro and servo systems, aircraft and powerplant instruments. He will be able to install, adjust, and calibrate these instruments in accordance with FAA and manufacturers' recommendations. He will be able to select and use FAA technical and legal publications in order to perform the duties of an aircraft technician. Lecture, 3 hours. Laboratory, 2 hours.

201-2 Applied Science. A general coverage of applied science and the physical principles of sound, fluid, and heat dynamics. Identification of and proper use of aircraft drawing symbols and schematic diagrams. Sketches of FAA major repairs and alterations to aircraft. Use of aircraft, blueprints, graphs, charts, and tables as applied to aircraft performance and engine power requirements.

203-5 Aerodynamics and Weight and Balance. The student will have a knowledge of flight theory and factors affecting aircraft in flight. He will explain and compare aircraft design features in subsonic, transonic, and supersonic aircraft. He will be able to assemble and rig various aircraft control systems, analyzing and correcting faulty flight characteristics. The student will fully understand and solve problems of aircraft weight and balance. He will be able to perform weighing, computation of G.G., and establishing of equipment list.

204-4 Hydraulics (Aircraft). The student will have a knowledge of fluid theory and applied physics which relates to aircraft hydraulics. He will know the theory of operation, maintenance requirements, and adjustments of various hydraulic components and systems. He will be able to test, inspect, troubleshoot, and service hydraulic systems and overhaul malfunctioning components in accordance with FAA and manufacturers specifications.

205-5 Cabin Environment and Jet Transport Systems. The student will understand the atmospheric variables at different altitudes and the basic equipment required to cope with these variables. He will be able to operate, identify, adjust, and locate common causes of malfunction in the cabin pressurization and air-conditioning systems. Using the available information, jet transport aircraft and simulated training panels, he will understand the operation of and be able to identify the components of flight control systems, landing gear, fuel, anti-icing, and fire detection systems. He will be able to compare and analyze aircraft systems of current jet transport aircraft and to diagnose and resolve malfunction problems. He will have knowledge of procedures for aircraft ground handling, APU operation, and system servicing.

210-7 A and P Electrical and Ignition System. The student will have a knowledge of the operation, repair, inspection, and service of aircraft electrical systems and components. Using schematic diagrams and simulated training panels of modern jet transports, he will learn operations and perform troubleshooting of: the AC and DC electrical systems, power management, and position and warning systems. He will be able to identify and understand components for reciprocating and jet powerplant ignition systems and reciprocating starting systems. He will be able to time, overhaul, and troubleshoot the various components of each system.

211-5 Reciprocating Powerplant. The student will have a knowledge of construction, operation, and timing mechanisms associated with aircraft reciprocating powerplants. He will be able to disassemble, clean, measure, inspect, and reassemble a powerplant to airworthy condition in accordance with appropriate FAA and manufacturers regulations and practices.

212-5 Carburetion, Lubrication, and Fuel. The student will be able to demonstrate his competence in identifying fuel and oil system components and carburetors, understanding the operating principles of each. He will be able to inspect, adjust, troubleshoot, and overhaul these components according to manufacturers and federal regulations. He will be able to identify the grades of aviation fuels and lubricants and understand the characteristics and uses of each.

214-4 Propellers. The student will have a knowledge of the physical laws and design characteristics governing propeller operation. He will be able to identify components, troubleshoot, and adjust fixed and variable pitch propellers. He will maintain fixed pitch propellers, and the governor system for variable pitch propellers in accordance with FAA and manufacturers standards.

215-5 Powerplant Testing. The student will have an understanding of the correct procedures and precautions to be observed during engine installation, ground operation, and fuel and oil servicing. He will be required to inspect and troubleshoot reciprocating and jet engines for airworthy condition and interpret engine instrument readings to diagnose engine malfunctions.

216-6 Jet Propulsion Powerplant. The student will be able to apply and understand physics laws related to jet powerplants. He will be able to identify and understand the operation of jet engines and their components. He will be able to perform inspection, maintenance repair, troubleshooting, and adjustments of jet powerplants and accessories. He will be able to analyze engine performance and to interpret operational charts, graphs, and tables.

225-6 Aircraft Inspection. The student will be able to perform a 100-hour and an annual inspection of an aircraft. He will demonstrate his knowledge of FAR's by checking appropriate AD's, classifying repairs, and pinpointing specific service problems. He will also complete the required maintenance forms, records, and inspection reports required by federal regulations. He will understand and be able to perform inspection under computerized aircraft maintenance programs.

230-6 Powerplant Inspection. The student will be able to perform periodic inspection of powerplants. He will demonstrate his knowledge of FAR and application of FAA AD's, Service Bulletins, and proper use of inspection equipment. He will use knowledge

learned in the powerplant curriculum to perform malfunction analysis of powerplant and related systems. Live equipment is used on a return-to-service basis.

Avionics Technology (Program, Major, Courses)

Avionics, or aircraft electronics, is a rapidly growing field requiring highly skilled technicians for work in the development, installation, and maintenance of the sophisticated avionics systems required for effective utilization of modern day aircraft by the aviation industry.

The avionics technician finds opportunities for employment with the airline industry, general aviation, and in aircraft manufacturing, where he will install, maintain, test and repair airborne communications and navigation systems, airborne radar systems, and related equipment.

The avionics technology program combines resources of programs in electronics and aviation technologies. As a rule, the student will be enrolled for the first year in electronics courses, and for the final year in courses offered in the facilities of aviation technology at the Southern Illinois Airport.

All instruction is programmed in a balanced combination of classroom lecture and actual "hands on" laboratory experiences under the supervision of instructors who have extensive experience and expertise in their respective fields.

The student will have courses in basic direct current, alternating current, electrical power systems, airborne auxiliary power systems, electrical generation and distribution, load transfer, solid state devices, aircraft communications and navigation systems, aircraft radar systems, aircraft flight control and instrumentation systems, aircraft integrated flight systems, UHF transmitters, receivers, and transceiver (including single sideband principles), pulse and microwave systems (including Doppler and inertial navigation systems), antenna types, wave propagation and transmission lines, and Federal Aviation Administration and Federal Communication Commission regulations.

Enrollment in the program is limited, so the prospective student should plan to make application well in advance of the session in which he plans to begin his studies.

In addition to regular University tuition and fees, the student is required to purchase basic tool kits at an approximate cost of \$20.00.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community colleges or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Avionics Technology*

GSD 101, 153	5
Aviation Technology 113	4
Avionics Technology 233, 234, 235, 236, 237, 238	32
Electronics Technology 101, 102, 111, 112, 121, 122	29
School of Technical Careers 105a, b, 118	6
Elective (Social Science)	3

Total 79

*To meet Federal and industry requirements, the student should plan to take additional 300-level courses offered as a post-associate specialty.

Courses

232-10 Avionics-Electronic Circuits. Designed especially for students who have completed the Aviation Technology Program and wish to enter the Avionics Technology Program for a second major. Theory of operation of diode, practical rectifiers, DC to DC converter and airborne audio amplifier system both tube and transistor. Construction of basic avionic circuits and isolation of malfunctioning components. Perform repairs and testing of transistors and tube and tube type of avionic circuitries. Lecture eight hours, laboratory four hours. Prerequisite: Aviation Technology 210A, Electronics Technology 102 and concurrent enrollment in Avionics Technology 233.

233-5 Aircraft Communication and Navigation Systems Theory. The student will have knowledge of theory of operation, calibration and frequency selection of NAV-COM equipment. He will understand transceiver circuitries, closed frequency loop, SCR circuits, audio amplifiers, inter-com systems, VOR navigation receivers, VOR converter, glide slope receivers, ADF receivers, and marker beacon receivers. He will be able to use avionics manufacturers maintenance and overhaul manuals and FAA regulations. Lecture five hours.

234-6 Avionics Laboratory II. The student will be able to identify system components. He will be able to operate and calibrate test equipment. He will be able to troubleshoot and repair communication and navigation equipment, and to perform alignment of transceivers, navigation receivers, VOR converter, ADF receivers and marker beacon receivers. He will effectively perform modification and compliance of Service Bulletins and FAA Directives. Laboratory twelve hours.

235-6 Flight System Theory. The student will have knowledge of operation and installation of aircraft control, navigation, communication, syncro and servo systems. He will be able to determine if a system meets factory and FAA specifications. He will learn to use technical publications. Lecture, six hours.

236-5 Avionics Laboratory III. The student will be able to operate, install, adjust, troubleshoot, and repair automatic pilot, automatic stabilization systems, and integrated flight systems. He will be able to install, adjust, and troubleshoot flux gate compass, gyrosyn directional indicator, rate gyros, RMI repeater and attitude gyros. He will be able to use technical publications. Laboratory ten hours.

237-5 Avionics Logic Circuits and Pulse Systems Theory. The student will be able to analyze the use and operation of logic gates, gate expanders, invertors, flip-flops, shift registers, decade counters and operational amplifiers as used in avionics circuits. He will have knowledge of pulse circuits used in distance measuring equipment and ATC transponders. Lecture, five hours.

238-5 Avionics Laboratory IV. The student will be able to locate, identify, troubleshoot, and repair logic circuits used in avionics equipment. He will be able to test, calibrate, troubleshoot, and repair distance measuring equipment and ATC transponders in accordance with manufacturer and FAA Repair Station Guidelines. Laboratory, ten hours.

302-3 Avionics Laboratory V. The student will be able to conduct avionics load analysis and perform weight and balance problems. Given a malfunction in an avionic system on the aircraft, he will be able to locate the faulty component, and to perform necessary repairs and to return equipment to airworthy status. Laboratory 12 hours.

303-4 FAR and FCC Regulations. The student will have knowledge of FAR 1 definitions and abbreviations, FAR 34 aircraft inspection and repair, FAR 65 certification of airmen other than flight crew members, FAR 91 general operating and flight rules, and FAR 145 repair stations. He will understand pertinent advisory circulars. He will understand FCC requirements for operator's licenses, aircraft station licenses, and aeronautical ground station licenses. Lecture four hours.

304-5 Avionics Radar Systems Theory. The student will have knowledge of theory of operation, adjustment and calibration of radar circuits. He will have knowledge of radar antennas. He will be able to use manufacturer maintenance, overhaul, and specification manuals. Lecture, five hours.

Biological Sciences (Major)

The biological sciences major consists of courses selected from the Departments of Botany, Microbiology, Physiology, and Zoology. A student selecting biological sciences as his major does not need to take a minor. Besides enrolling in biological sciences courses, the student is also required to take courses in

chemistry and mathematics. Students should consult their advisers for additional information.

Bachelor of Arts Degree, College of Science

<i>General Studies Requirements</i>	45
<i>Supplementary College of Science Requirements</i>	8
English Composition	(3)
Speech	(2)
Writing Course	(2)
Foreign Languages	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Chemistry 224, 225	(4) + 3
 <i>Requirements for Biological Sciences Major</i>	44
GSA 208, 209	4
Biology 305, 306, 307, 308, 309 (any two)	6
Botany 200 and 201, 204 and 205	8
Chemistry 340	4
Microbiology 301, 302	7
Zoology 120a,b	8
Biological sciences electives at 400-level	7
 <i>Electives</i>	23
 <i>Total</i>	120

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The requirements in biological sciences will be the same as those in the College of Science. Those students desiring to attain a secondary education teaching certificate must also enroll in Secondary Education 487. See Teacher Education Program, page 68.

Minor

A minor in biological sciences consists of a minimum of 24 hours and may be taken in the College of Education, the College of Liberal Arts, or the College of Science. It must include two of the following biology courses: Biology 305, 306, 307 (6 hours), plus 9 hours selected from the following courses: GSA 208, 209, 303, 312, 313; Botany 200, 201, 204, 205; Microbiology 301, 302; Physiology 410a,b; and Zoology 120a,b.

Biology (Courses)

Courses

305-3 Genetics-Classical and Molecular. Broad principles of genetics, including Mendelism, chromosomal behavior, genetic mapping and mutation, Allelism, genes and development, polygenic systems, inbreeding and outbreeding, and genetic applications.

306-3 Cell Physiology. The basic functions of the cell are considered. The biochemical basis and mechanisms of the cellular processes, the functions of the subcellular structures, and their ramifications will be explored in the context of plant and animal cells.

307-3 Environmental Biology. Broad principles of ecology on the organismic, the population, the community, and the ecosystem level. Includes environmental factors, adaptations, energy and material balance, succession, and human ecology. Prerequisite: advanced standing in biology.

308-3 Organismic Functional Biology. Fundamental principles and biological examples of basic phenomena characteristic of organisms, including transport, integration, and reproductive systems. Detailed attention will be given to various organ systems with an emphasis on function.

309-3 Developmental Biology. Principles of development; causal mechanisms, cybernetic and phylogenetic aspects. Lecture course.

315-2 History of Biology. The interrelationships between the development of biological knowledge and the history of mankind.

Black American Studies (Minor, Courses)

The black American studies program will plan a program for a special major leading to the Bachelor of Science degree in the College of Human Resources. Any student interested in such a program should consult this catalog for an explanation of the special major, and then contact the academic counselor in black American studies in order to plan and receive approval for the program.

A minor in black American studies consists of a minimum of 20 hours which are to be selected from black American studies course offerings and organized according to each individual student's field of interest. An official minor is subject to departmental approval.

Courses

209-3 Introduction to Black American Studies. A survey course providing students with insights into various disciplines and how these disciplines approach the Black American experience. Lecturers of diverse interests attend to specific and general problems in their field and hope to enlighten and expand the awareness of the need for scholarly study of Blacks.

225-3 Social Change in Africa. Examination of the interplay between tradition and modernity in an effort to understand the new Africa. Some of the forces of social change are analyzed. Other topics include African women and the family structure in change and the problems of African development.

230-3 Introduction to Black Sociology. An introductory course which focuses on the concepts of Black sociology in order to fill the gaps of "traditional sociology" pertaining to the Black experience. Designed to heighten the student's awareness of the Black identity and the sociological phenomena which affect it and acquaints the student with specific sociological problems in the study of Afro-Americans. Prerequisite: GSB 109.

257-1 Black American Studies Choir. Prerequisite: consent of instructor.

311-6 (3, 3) Survey of Black American History. (Same as History 362.) The Black man's role and contribution in the building of America and his ongoing fight for equality. (a) African background to 1865. (b) 1865 to present.

314-6 (3, 3) History of Africa. (Same as History 387.) Precolonial history, nineteenth century political, social, and economic changes, colonialism, African nationalism, and independence.

330-3 Black American Social Problems. Comparative study of the social problems which afflict Black Americans and their consequences, including crime and delinquency, mental and emotional disorders, drug addiction, housing conditions, poverty and unemployment, and labor conditions. Prerequisite: consent of instructor.

332-3 Black Americans and the Law. Criminal deviancy and its consequences among Afro-Americans. Includes social history, immigration to America, and life conditions here. Prerequisite: 230 or consent of department.

333-4 The Black Family. Exploring the myths and realities of the black family from a sociological perspective. Prerequisite: 220 or junior standing.

336-4 The Black Personality. Examines current areas of interest in the study of the psycho/social characteristics of Black Americans. Theoretical and empirical data will be examined. Considers critical issues such as cognitive development, self-concept, socialization process and inter- and intra-group relations. Prerequisite: consent of department.

339-3 Black Americans and the Correctional Process. Analysis of selected topics: the prison community and the Black inmate; correctional education and the Black inmate; and the Black professional. Prerequisite: 332.

345-3 Law and Civil Liberties. (See Political Science 332.)

350-3 Contemporary Black Drama. Surveys the works of major and minor writers of contemporary Black dramas from *A Raisin in the Sun* to *No Place to Be Somebody*.

Explores recent criticism on Black theater, and approaches oral and written criticism from the point of view of "Black aesthetics." Prerequisite: GSC 201, GSC 203, or consent of department.

355-3 The Black American Novel Since *Native Son*. The Black American novel and its major themes since Richard Wright's *Native Son*. Includes such authors as Baldwin, Petry, Williams, etc. Prerequisite: GSC 210, GSC 325, junior standing, or consent of instructor.

357-3 Blacks in the Performing Arts. History of the role of Blacks in the performing arts covering dance companies, ballet, folk dance and Black dramatists; cinema, in all its forms; radio and television; and music (spirituals, jazz, opera, classics, etc.) Prerequisite: GSC 325, History 349a,b,c, History 309, or consent of department.

358-3 Black Theater Workshop. Designed to train students in the arts of the theater. While major emphasis is placed on acting techniques, opportunities for training in make-up design and oral interpretation are also provided.

362-3 The Music of Black Americans. (See Music 372.)

370-3 Bibliography of Black American Studies. An introductory survey of Black American bibliographic resources course, culminating with students' compilation of a selective, annotated bibliography covering some chosen aspect of the Black experience. Prerequisite: junior or senior standing or consent of instructor.

380-2 Regional Geography of Sub-Saharan Africa. (See Geography 365.)

385-4 African Traditional Religions. (See Religious Studies 333.)

391-2 Social Services and Minority Groups. (See Social Welfare 391.)

399-3 to 5 Independent Study in Black American Studies. Independent study which examines problems and issues not covered in a specific course. Hours and subject matter decided during consultation with a faculty member. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.

430-3 Black Political Socialization. Definitive approach to how people learn about politics focusing on Blacks because of their unique experience; i.e., prolonged minority group status. Research oriented, in that, it takes an explanative and predictive approach to produce models of political learning. Not for graduate credit. Prerequisite: 230, junior or senior standing, or consent of department.

445-3 Race and Politics in the United States. (See Political Science 429.) Not for graduate credit.

455-2 to 12 Rehabilitation Services with Special Populations. (See Rehabilitation 445.)

465-3 Governments and Politics of Sub-Saharan Africa. (See Political Science 465.) Not for graduate credit.

475-3 Sociological Effects on Black Education. A teacher-oriented course dealing with up-to-date research in Black and minority education. The instructor utilizes the findings of current periodicals to present models for understanding and communicating with Black children. Not for graduate credit. Prerequisite: Education 303 or consent of department.

480-4 to 8 (4, 4) Seminar in Black Studies. Analysis of the "The Black Experience" directed toward practical contributions in the area studied. Topics vary with instructor. May be repeated once for a total of eight credits provided registrations cover different topics. Topics announced in advance. Prerequisite: GSB 109 or consent of department.

490-1 to 3 Cross-Cultural Rehabilitation. (See Rehabilitation 419.) Not for graduate credit.

499-3 Special Readings in Black American Studies. Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand. Prerequisite: consent of instructor.

Botany (Department, Major, Courses)

Botany is a broad science that includes many specialties. A major in botany should be considered by those wishing to specialize in teaching and/or research in the plant sciences and related fields.

Students planning to major in botany should consult with the chairman of the department for information concerning the programs in the department.

As a general rule, a student who intends to apply for admission to a graduate school to study for an advanced degree in botany should include the following in his undergraduate program: inorganic and organic chemistry, mathematics through calculus, a modern European language, and as many botany and biology courses as time and scheduling will permit.

An honors program is available to those juniors and seniors in botany who have an overall grade point average of 3.00 or better and an average in botany courses of 3.25 or better. The honors student should enroll in Botany 492 during some semester in both his junior and senior years.

Bachelor of Arts Degree, College of Science

<i>General Studies Requirements</i>	45
<i>Supplementary College of Science Requirements</i>	8
English Composition	(3)
Speech	(2)
Writing Course	(2)
Foreign Languages	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Chemistry 224, 225	(4) + 3
 <i>Requirements for Major in Botany</i>	36
Botany 200, 201, 204, 205, 304, 320, 335, 337	19
Biology 305, 307	6
Botany electives	7
Chemistry 340	4
 <i>Electives</i>	31
 <i>Total</i>	120

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The requirements in botany must total 32 semester hours, including Botany 200, 201, 204, and 205. Those students desiring to attain a secondary education teaching certificate must also enroll in Secondary Education 487. See Teacher Education Program, page 68.

Minor

A minor in botany consists of a minimum of 16 semester hours, selected from any botany offerings except 390, 391, 462, or 492.

Courses

For all field courses in botany, students will be assessed a transportation fee. In addition, certain courses may require the purchase of additional materials and supplies, generally \$1 to \$5 in total cost.

- 160-3 Integrated Science—A Process Approach. An interdisciplinary science course stressing processes of science; observing, classifying, using numbers, measuring, using space-time relationships, communicating, predicting, inferring, defining operationally, formulating hypotheses, interpreting data, controlling variables, and experimenting.
- 200-3 General Botany. An introduction to botany. Emphasis is placed on structure and development and associated physiological phenomena. Consideration also is given to basic aspects of plant genetics, classification, evolution, ecology, and conservation.
- 201-1 General Botany Laboratory. Exercises in observation and experimentation on plant structure and development and associated physiological phenomena. Prerequisite: 200 or concurrent enrollment.
- 204-3 Botany—Plant Diversity. An evolutionary approach to the study of major plant groups—algae to flowering plants. Emphasis will be given to practical aspects of various plant groups in relation to Man and his environment. Prerequisite: 200 or consent of instructor.
- 205-1 Botany—Plant Diversity Laboratory. Cytological, anatomical, and morphological study of selected representatives of major plant groups. All labs are coordinated with

lectures in 204. One two-hour laboratory per week. Prerequisite: 204 or concurrent enrollment.

258-2 to 8 Work Experience Credit. Under special circumstances, practical experience in laboratories or other work directly related to botany can be used as a basis for granting credit in botany. Credit for past work experience is sought by petition to the chairman of the department and requires approval of the dean of the College of Science. Credit for ongoing work experience requires approval of the chairman of the department prior to enrollment.

259-2 to 8 Occupational Educational Experience Credit. Under special circumstances, advanced training in a field directly related to botany can be used as a basis for granting credit in botany. Such credit is sought by petition to the chairman of the department and requires approval of the dean of the College of Science.

304-3 Plant Classification. Identification of local flora by use of various manuals. Survey of taxonomy and nomenclature. Every semester. Prerequisite: 200 or equivalent.

308-3 Taxonomy of Cultivated Plants. Identification of woody and herbaceous cultivated plants and discussion of their use as ornamentals. Prerequisite: consent of instructor.

320-4 Elements of Plant Physiology. The functions of plants and their relation to the various organs. Two lectures and four laboratory hours per week. Every semester. Prerequisite: 200; organic chemistry or a minor in chemistry.

335-2 Methods in Genetics. Selected organisms and techniques illustrating genetic principle. Two two-hour laboratories per week. Prerequisite: Biology 305 or equivalent.

337-2 Ecology Laboratory. Techniques in vegetation analysis and environmental measurements. One four-hour laboratory per week. Prerequisite: Biology 307 or consent of instructor.

390-1 to 3 Readings in Botany. Individually assigned readings in botanical literature. Every semester. Prerequisite: consent of departmental chairman.

391-1 to 4 Special Problems in Botany. Individual laboratory or field work under supervised direction. Every semester. Prerequisite: consent of departmental chairman.

400-4 Plant Anatomy. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisite: 200 or consent of instructor.

404-4 The Algae. A phylogenetic approach to the study of algae with emphasis on comparative cytology, morphology, and ecology. Laboratories include a detailed survey of freshwater algae and a general treatment of representative marine forms. Two lectures and two two-hour laboratories per week. Prerequisite: 204 and 205 or consent of instructor.

405-4 The Fungi. A survey of the fungi—their structure, development, relationships, ecological roles, and economic importance. Two lectures and two laboratories. Prerequisite: 200 and 201.

406-3 Bryology. Structure, development, and relationships of the liverworts, hornworts, and mosses. Two lectures and one laboratory per week. Prerequisite: 204.

410-3 Taxonomy and Ecology of Bryophytes and Lichens. Floristic studies of the moss, liverwort, hornwort, and lichen communities of southern Illinois. Spring semester of odd-numbered years. Prerequisite: 200 or consent of instructor.

411-4 Morphology of Ferns and Fern Allies. The study of external form, internal structure, and relationships of ferns and fern allies, living and extinct. Two lectures and two laboratories per week. Prerequisite: 204.

412-4 Morphology of Seed Plants. The study of external form, internal structure, and relationships of gymnosperms and angiosperms, living and extinct. Two lectures and two laboratories per week. Prerequisite: 204.

414-1 to 2 Paleobotany. (Same as Geology 414.) The development of skills in paleobotany through the pursuances of specific laboratory or library research problems. Prerequisite: 400 or consent of instructor.

421-4 Botanical Microtechnique. Introduction to practical methods of preservation and preparation of plant materials for laboratory and microscopic study. Paraffin and plastic embedding, section techniques, and use of general and histochemical stains stressed. Includes chromosome squashing, whole-mount preparation, photomicrography, and other techniques. Two lectures and two laboratories per week. Prerequisite: 200.

425-10 (5, 5) Advanced Plant Physiology. (a) Intermediary plant metabolism. Characterization of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. (b) Physics of plants; membrane phenomena; water relations; mineral nutrition. Prerequisite: 320 and consent of instructor.

440-3 Grassland Ecology. A study of grassland structure and function in relation to various biotic and abiotic factors. Cost of field trips (\$5.) and textbooks must be incurred by the student. Prerequisite: 304 and Biology 307.

443-4 Forest Ecology. Physiology and autecology of forest and shrubland species. Growth and development of woody plants in relation to climatic, edaphic, pyric, and other environmental forces as exemplified in laboratory and field studies. Prerequisite: Biology 307 or consent of instructor.

444-4 Analysis and Classification of Vegetation. Includes concepts and analytical methods pertaining to plant community energetics, nutrient dynamics, succession, vegetation classification and niche theory. Laboratory will include the application of these concepts and methods to field situations. Cost of textbooks and travel fee (\$15.) must be incurred by the student. Prerequisite: Biology 307.

446-8 Tropical Ecology. Two weeks of marine ecology on the atolls and extensive barrier reef off the coast of Belize, British Honduras, and two weeks of terrestrial ecology at several locations inland. Cost varies yearly. Summer. Prerequisite: advanced undergraduate or graduate standing in one of the biological sciences.

447-2 to 6 Field Studies in Latin America. Two to six weeks of intensive field work to acquaint students with the flora and vegetation in various environments of Latin America and with ecological and taxonomic field techniques. Cost varies with type of study and location. Transportation cost: \$80.00. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.

448-3 to 8 Field Studies in the Western United States. Three to six weeks of intensive field work designed to acquaint students with the flora, vegetation, and environments of the Rocky Mountains and adjacent areas. Both ecological and taxonomic field methods are emphasized. Transportation cost (\$100), travel expenses, and textbooks must be incurred by the student. Prerequisite: 304, Biology 307 and consent of instructor.

449-2 Elements of Taxonomy. Principles of taxonomy including historical sketch, phyletic concepts, classical and experimental methods. One lecture and three laboratory hours per week. Prerequisite: 304 or consent of instructor.

450-2 Plant Geography. World distribution of plants related to environmental, floristic, and historical factors. Prerequisite: consent of instructor.

456-4 Introductory Pathology. A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips. Prerequisite: consent of instructor, or major in botany, plant and soil science, or forestry.

457-3 Forest Pathology. A study of the nature and control of tree diseases in forests, parks, streets, and nurseries. Fungal diseases are stressed. Three lectures per week. Prerequisite: consent of instructor or major in botany, forestry, or plant and soil science.

462-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Elementary Education 442.) Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs; e.g., SAPA, ESS, SCIS. Three lectures and one two-hour laboratory per week. One or two additional field trips required. Prerequisite: teacher education or consent of instructor.

484-3 Palynology. (See Geology 484.)

490-3 Photographic Methods in Scientific and Biological Photography. Black and white and color. Specimen photography, macrophotography. Slides for presentation, materials and methods used in scientific publications. Prerequisite: consent of instructor.

491-3 Scientific Illustration. Two dimensional and three dimensional graphs, maps, lettering and line drawings. Materials and methods used in scientific publications. Prerequisite: consent of instructor.

492-2 to 6 Honors in Botany. Individual research problems available to qualified juniors and seniors. Prerequisite: consent of department chairman.

503-10 (5, 5) Advanced Angiosperm Taxonomy.

524-2 Advanced Plant Genetics.

525-3 Cytology.

526-4 Cytogenetics.

533-4 Plant Growth and Morphogenesis.

535-2 Energetics of Aquatic Ecosystems.

542-2 Biosystematics.

543-3 Experimental Ecology.

551-3 Upland Flora.

552-3 Lowland Flora.

570-2 to 3 Graduate Readings in Botany.

580-1 Seminar.

581-1 Ecology Seminar.

582-1 Bryology Seminar.

584-3 Advanced Palynology.

590-1 to 3 Introduction to Research.

591-2 to 9 Research.

599-2 to 9 Thesis.

600-1 to 36 (1 to 12 per semester) Dissertation.

Business Administration (Major [Graduate only], Courses)

The graduate faculty in business administration, consisting of members of the Departments of Accountancy, Administrative Sciences, Finance, and Marketing of the College of Business and Administration, offers graduate work leading to the Master of Business Administration degree. The MBA program has as its objective the development of professional managers and executives to serve the needs of business and government and to prepare interested graduates for doctoral study. The program has been structured with flexibility so as to serve holders of baccalaureate degrees in business administration as well as those who hold degrees in other disciplines. For a more complete description of the program, refer to the Graduate Catalog.

Courses

410-3 Accounting Concepts. Interpretation and critical analysis of reports, statements, and other accounting data from the viewpoint of users of financial information. Restricted to MBA students. Prerequisite: enrollment in MBA program or consent of instructor.

430-3 Business Finance. An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisite: enrollment in MBA program or consent of instructor.

440-3 The Management Process. Analysis of management theories and the administrative process. Specific managerial activities are analyzed and discussed. Functional relationships in administered organizations are explored. Prerequisite: enrollment in MBA program or consent of instructor.

450-3 Introduction to Marketing Concepts. An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Prerequisite: enrollment in MBA program or consent of instructor.

451-5 Methods of Quantitative Analysis. (See Mathematics 457.)

500-3 Research Applications in Business and Organizations.

501-3 Operations Research I.

502-3 Business in our Capitalistic Society.

510-3 Managerial Accounting and Control.

511-3 Accounting Theory.

512-3 Auditing Concepts and Methods.

514-3 Controllership.

515-3 Accounting Informations Systems.

519-3 Seminar in Accounting.

521-3 Business Conditions Analysis.

526-3 Managerial Economics.

530-3 Financial Management.

531-3 Advanced Financial Management.

532-3 Financial Institutions and Markets.

533-3 Investment Concepts.

539-3 Seminar in Finance.

540-3 Managerial and Organization Behavior.

541-3 Operations Research II.

543-3 Personnel Management.

544-3 Production-Operations Management.

549-3 Seminar in Administration.

550-3 Marketing Management.

551-3 Product Strategy and Management.

552-3 Advanced Marketing Research and Analysis.

555-3 Consumer Behavior.

559-3 Seminar in Marketing.

580-3 International Business Operations.

591-3 Independent Study.

598-3 Business Policies.
599-3 to 6 Thesis.

Business Economics (Major)

The business economics major offered through the College of Business and Administration emphasizes the application of economic concepts and the use of critical analysis to the solution of economic and managerial problems.

This undergraduate program is an excellent general preparation for future managerial and staff assignments in a variety of business and public organizations. The program also prepares students for graduate study in economics as well as for the Master of Business Administration (MBA) degree.

Those students who desire professional careers as business and managerial economists are advised to plan to complete one to four years of postgraduate study.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45
<i>Professional Business Core (See page 64)</i>	47
<i>Requirements for Major in Business Economics</i>	15-18
Administrative Sciences or Economics 479	3
Economics 315, 340, 341	9
Finance 475	(3) ¹
Two courses from the following list, one of which must be in economics	3-6
Economics 310, 330, 329, 436, 443, 465, 467	
Accounting 341, 365, 405	
Administrative Sciences 345, 352, 361	
Finance 323, 325, 480	
Marketing 335, 341, 390, 495	
<i>Electives</i>	10-13
<i>Total</i>	120

¹Hours shown in parentheses are already included in total of hours shown for professional business core.

Business Education (Department, Major [Business Teacher Education], Courses)

The Department of Business Education offers a business teacher education major to prepare business teachers for work in high schools, community colleges, and other institutions in which business subjects are taught.

Students who prepare to teach business subjects also become qualified for work in business and industry, particularly in secretarial, accounting, marketing, and management positions. Upon graduation business teacher education majors have job opportunities in two areas: (1) working as teachers, supervisors, or administrators in educational institutions; and (2) working as secretaries, accountants, office managers, and in other positions in business and industry.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Business Teacher Education</i>	48-60
Accounting 221	
Administrative Sciences 170 or GSB 305	
Economics 214 or GSB 211	
Marketing 304	
Business Education 316, 317	
Secretarial and Office Specialities 101A and 101B	

Preparation to teach in four (preferably five) of the following areas:

Typewriting: Business Education 203, 351, Secretarial and Office Specialities 106

Since typewriting is the most popular business subject taught in the high school and is a part of the teaching assignment of almost all business teachers, it is highly recommended that business teacher education majors elect Area 1, Typewriting, as one of their four or five teaching areas. Those students who do not elect Area 1 may be delayed in getting a student teaching assignment because the number of business teachers in Southern Illinois who do not teach typewriting is limited.

Shorthand and Transcription: Business Education 224, 352

Bookkeeping, Accounting, and Record Keeping: Accounting 222; Business Education 341, 355

General (Basic) Business and Consumer Education: Four of the following in addition to those taken in fulfilling the requirements of any other part of the program: Administrative Sciences 170, 304; Economics 214, 215; GSB 305, Finance 370; Family Economics and Management 340, 341; Business Education 353, 410 (Business Education 353 or 410 is required as one of the four courses. Only one of these two courses may be taken for credit.)

Office Practice and Machines: Courses required for Area 1, Typewriting; Business Education 326, 341, 354

Business Law: (To be selected as a fifth or sixth area only.) Finance 271, 370

Distributive Education: Marketing 363, 401; Business Education 409

Data Processing: Electronic Data Processing 101A (may be waived for students with prior experience or training in EDP); one of the following: Electronic Data Processing 101B, 201A, 204A, 206, Computer Science 202, Engineering 222, or Accounting 319; Business Education 412.

<i>Professional Education</i>	24
See Teacher Education Program, page 68.	

<i>Electives</i>	0-3
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<i>Total</i>	120
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To become a vocational teacher or coordinator in a reimbursable vocational program in distributive education or office occupations, a minimum of two of the following courses is recommended: Business Education 415; 485; 525.

The city of Chicago has requirements that differ somewhat from those established by the Department of Business Education, Southern Illinois University at Carbondale, and the State of Illinois. Copies of these requirements may be obtained from the Department of Business Education.

All students transferring into the undergraduate business teacher education program are required to take a minimum of 6 hours of work in courses offered by the College of Business and Administration and 10 hours in courses offered by the Department of Business Education.

Minor

A minor in Business Teacher Education consists of a minimum of 20 hours in business. Minors are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

Courses

201-2 Beginning Typewriting. Development of mastery of the keyboard, speed and accuracy in the touch operation of the typewriter, and skill and knowledge needed for vocational and personal uses of typewriting. For students who have had no formal training in typewriting or who have had very little, or who were unsuccessful.

203-2 Advanced Typewriting. Emphasis on development of advanced typewriting skills and knowledges and their application in typing office style copy including statistical reports; tabulation of unarranged materials; business correspondence; legal, medical, governmental, and technical typewriting problems; and typing from rough draft copy. Prerequisite: 202 or equivalent.

224-3 Advanced Shorthand and Transcription. Review of the Gregg shorthand system. Development of high-level dictation and transcription skills and knowledges. Prerequisite: 223 or equivalent.

243-1 Key punch. Emphasis on skill development and solving special problems, such as setting up program cards, determining fields, and tabulating numerical copy. Prerequisite: 201 or equivalent.

300-3 Occupational Simulation and Cluster Studies. (See Occupational Education 300.)

315-2 Leadership of Youth and Peer Groups. (See Agricultural Industries 315.)

316-2 Communications in Business. Principles and practice in written and oral business communications. Included is the development of ability to use words and correct grammatical construction in oral and written business expression; the learning of the principles of planning, organizing, and writing effective business messages; and the refinement of listening skills.

317-3 Introduction to Data Processing. Emphasis on operation of keypunch machine, vocabulary development, unit record equipment, concepts of programming, fundamentals of computer mathematics and applications, and flow charting.

326-3 Executive Secretarial Procedures. An advanced course for secretaries and administrative assistants, covering such topics as personality and human relationships, office mail, office equipment, travel, sources of information, communications, and business reports. Prerequisite: 202 or equivalent.

341-2 Calculating Machines. Theory and practice in solving business problems by using calculating and adding machines. Includes training in the selection and use of electronic, rotary, printing, and key-driven calculators and ten-key and full-keyboard adding-listing machines. Emphasis on characteristic uses of each kind of machine.

351-2 Teaching Typewriting. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, review of course content, standards of achievement, and evaluation of pupil performance. Prerequisite: 203 or equivalent.

352-2 Teaching Shorthand and Transcription. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, review of course content, standards of achievement, and evaluation of pupil performance. Prerequisite: 224 or equivalent.

353-2 Teaching General Business Subjects. Development and use of instructional

methods and materials, review of course content, and the evaluation of pupil progress in such basic business subjects as general business, consumer education, and business law.

354-2 Teaching Office Practice and Machines. Instructional methods and materials for, and the evaluation of pupil performance in, office practice, clerical practice, and office machines. Review of course content. Prerequisite: 326 or equivalent and 341 or equivalent.

355-2 Teaching Bookkeeping and Accounting. Teaching procedures, instructional materials, and evaluation of pupil progress in bookkeeping and accounting; instruction and practice in operations taught in high school and college bookkeeping-accounting classes. Prerequisite: Accounting 252 or equivalent.

400-2 Principles and Problems of Business Education. A study of the fundamentals of business education; its relation to business, to general education, and to vocational and career education; its history, current status, and trends; special emphasis on objectives and curriculum problems.

409-2 Teaching Distributive Education. For those who plan to become teacher-coordinators of vocational cooperative or in-school distributive education programs. Emphasis on the planning of facilities; selection and review of course content; preparation of instructional materials; organization and arrangement of units; related instruction; simulated, block and project plans; and student evaluation. Prerequisite: Marketing 304 and 363.

410-2 Teaching Consumer Education. Principles of teaching consumer education in secondary schools and junior colleges. Emphasis on meeting the state requirements for teachers of consumer education in Illinois. Selection and study of course content; preparation of instructional materials; organization and arrangement of units of study; and planning an evaluation program. Prerequisite: GSB 346 or Finance 305 or equivalent.

411-1 to 4 Workshop in Business Education. Major issues in business teacher education. Ordinarily offered from one to four weeks of the summer session.

412-2 Teaching Data Processing. Instructional methods and materials for, and the evaluation of pupil progress in, data processing. Prerequisite: 317 or Electronic Data Processing 101 or equivalent.

415-3 Supervised Business Experience and Related Study. Designed to prepare teachers and coordinators in accordance with the requirements of the Illinois State Plan for the Administration of Vocational Education. Classroom study of the principles and problems of coordinating in-school or cooperative vocational business education programs; supervised occupational experiences; weekly reports from supervised training stations; classroom analysis and evaluation of on-the-job experiences of the members of the class in relation to their future work as coordinators and vocational teachers. Prerequisite: consent of instructor.

425-3 Introduction to Cooperative Vocational Education. (See Occupational Education 425.)

426-2 Office Management. Principles of management applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of office; office services, procedures, standards, and controls; records management.

427-2 Records Administration. Methods and systems of controlling, storing, retrieving and disposing of records. Application of principles to such records as medical, legal, educational, industrial, and governmental.

485-3 Principles and Philosophies of Vocational and Technical Education. Team teaching used. Nature and purposes of practical arts, vocational and technical education, their relationships and differences, and the place of each in preparing people for the world of work.

500-2 Research in Business Education.

503-2 Tests and Measurements in Business Education.

508-2 Administration and Supervision in Business Education.

509-2 Improvement of Instruction in Consumer and General Business Subjects.

510-2 Improvement of Instruction in Secretarial Subjects.

525-3 Cooperative Vocational-Technical Education.

590-1 to 4 Readings in Business Education.

593-2 to 4 Individual Research in Business Education.

599-1 to 6 Thesis.

Chemistry and Biochemistry (Department, Major [Chemistry], Courses)

The Department of Chemistry and Biochemistry offers three degree programs with a major in chemistry. The first is the Bachelor of Science degree in the

College of Science. This degree is for those who wish to prepare for graduate study in chemistry or who will become professional chemists. Students completing this degree program will be certified to the American Chemical Society.

The second is the Bachelor of Arts degree in the College of Science. This program is designed primarily for students who wish to complete a major in chemistry, but who plan to eventually go into other professional areas such as medicine, dentistry, or business.

The third program of study leads to the Bachelor of Science degree in the College of Education. This degree program is administered by the College of Education. It is provided for those who wish to become secondary school chemistry teachers.

Candidates for admission to degree programs are required to have a 2.0 grade point average in chemistry courses. However, students with grade point averages in chemistry courses below 2.25 can expect to have difficulty in advanced courses.

A knowledge of German is recommended for all majors in chemistry, and required for those students working for ACS certification.

Students taking a laboratory course will be required to purchase a notebook or a laboratory exercise book costing from \$1.50 to \$6.00.

Bachelor of Science Degree, College of Science

CERTIFIED BY THE AMERICAN CHEMICAL SOCIETY

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	5
English Composition	(3)
Speech and a Writing Course	(4)
Foreign Language (German)	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Biological Sciences (not general studies)	(6) ¹
<i>Requirements for Major in Chemistry</i>	63
Chemistry 224, and 225 or 222a,b; 226, 344 and 345 plus either 348 and 349 or 346 and 347; 462a,b and 463a,b; 434; 411, 490; either 446 or 450 or 466; and one additional 400 level course for a minimum of 48 hours	(3) + 45
Mathematics 150, 250, 251, 305	14
Physics 205a,b and 255a,b	(4) + 4
German 126a,b	(8) ³
<i>Electives</i>	7
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

³Russian or French may be substituted with departmental permission.

Bachelor of Arts Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	5
English Composition	(3)

Speech and a Writing Course	(4)
Foreign Language	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Biological Sciences (not general studies)	(6) ¹
<i>Requirements for Major in Chemistry</i>	53-57
Chemistry 224 and 225 or 222a,b; 226; 344 and 345 plus either 348 and 349 or 346 and 347; either 462a,b and 463a,b or 460; 434; plus additional courses to give a minimum of 34 hours	34-38
Mathematics 150, 250, and 251 or 305	11
Physics 205a,b and 255a,b ²	8
<i>Electives</i>	13-17
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

²Certain other courses may be substituted with permission of the department.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45 ¹
<i>Requirements for Major in Chemistry</i>	40-47
Chemistry 224 and 225 or 222a,b; 226; 344 and 345 plus either 348 and 349 or 346 and 347; 462a,b and 463a,b or 460	(4) + 23-30
Mathematics 111 or 110a,b; 150, 250 and 251 or 305 recommended (251 is prerequisite to Chemistry 462a,b)	(4) + 12
Physics 203a,b and 253a,b or 204a,b and 254a,b or 205a,b and 255a,b	(3) + 5
Modern foreign language recommended	
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Electives</i>	4-11
<i>Total</i>	120

¹Refer to Professional Education Experiences for General Studies courses which may be required.

Minor

The minor in chemistry requires a minimum of 18 semester hours including 222a,b or 224 and 225. Elective courses must be selected with at least one course in each of two different areas of chemistry. Recommended courses are 226, 340 and 341 or 344 and 345, 460 or 462a,b plus 463a,b.

Courses

115-4 Introductory General Chemistry. A preparation for Chemistry 224 or 222 for students who have less than a year of high school chemistry. May be audited by students

who have had a year of high school chemistry. Two lectures, one three-hour laboratory, and one hour of recitation per week.

140-8 (4, 4) Survey of Chemistry. A terminal, two-semester survey course of general chemistry, organic chemistry and biochemistry designed to meet the needs of majors in home economics and others having comparable requirements. Not applicable to a major or minor in chemistry. Three lectures and one three-hour laboratory each week.

222-8 (4, 4) Introduction to Chemical Principles. For students majoring in scientific, preprofessional, engineering, or technological programs. Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids and solids, thermodynamics and kinetics, chemical equilibria, pH, electrochemistry. The content of this two semester sequence is equivalent to the one semester offering of 224 plus 225. Two lectures, one laboratory-lecture recitation, and one three-hour laboratory per week. Must be taken in a,b sequence. Prerequisite: one year of high school chemistry or 115.

224-5 Introduction to Chemical Principles. For students majoring in scientific, preprofessional, engineering, or technological programs. Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids and solids, thermodynamics and chemical equilibria, pH, electrochemistry. Four lectures and one recitation per week. Prerequisite: one year of high school chemistry, or 115, and concurrent enrollment in 225. The 225 corequisite may be waived for students in those departments where 225 is listed as a required course for graduation.

225-2 Introduction to Laboratory Techniques. For students majoring in scientific, preprofessional, engineering, or technological programs. Introduction to laboratory apparatus and techniques. One three-hour laboratory and one hour of laboratory-lecture per week. Prerequisite: one year of high school chemistry, or 115, and concurrent enrollment in 224.

226-5 Introduction to Quantitative Chemical Principles. Introduction to quantitative chemical determinations. Two lectures, one laboratory-lecture recitation and two three-hour laboratories per week. A reasonable knowledge of logarithms and algebra is assumed. Prerequisite: 222b, or 224 plus 225.

340-4 Survey of Organic Chemistry. A basic survey of organic chemistry. This course does not satisfy the prerequisites requirement for Chemistry 450 or 451. Four lectures per week. Prerequisite: 222b, or 224 plus 225, and concurrent enrollment in 341.

341-2 Organic Chemistry Laboratory. One three-hour laboratory and one laboratory-lecture per week. Prerequisite: 222b, or 224 plus 225, and concurrent enrollment in 340.

344-4 Organic Chemistry. A fundamental introduction to the chemistry of carbon compounds designed for chemistry and other science majors; premed and pre dental students, engineers, and others ultimately requiring a year of organic chemistry. Four lectures per week. Prerequisite: 222b, or 224 plus 225, and concurrent enrollment in 345.

345-2 Laboratory Techniques. Physical techniques and reactions of inorganic and organic compounds. One three-hour laboratory and one laboratory-lecture per week. Prerequisite: 222b, or 224 plus 225, and concurrent enrollment in 344.

346-2 Organic Chemistry. A second lecture course in organic chemistry for preprofessionals and those wanting a minor in chemistry. The organic chemistry of compounds of biological interest with emphasis on structure and chemical reactions. Two lectures per week. Prerequisite: 344 and 345 and concurrent enrollment in 347.

347-3 Laboratory Techniques. A laboratory course for preprofessionals and those wanting a minor in chemistry. Synthesis and reactions of compounds of biological interest. One laboratory-lecture and two three-hour laboratories per week. Prerequisite: 344 and 345 and concurrent enrollment in 346.

348-2 Organic Chemistry. The organic chemistry of compounds of biological interest with emphasis on the mechanistic and stereochemical approach to organic chemistry. The second lecture course in organic chemistry for chemistry majors. Two lectures per week. Prerequisite: 344 and 345 and concurrent enrollment in 349.

349-3 Laboratory Techniques. A laboratory course for chemistry majors. Synthesis and structural identification of inorganic and organic compounds, with emphasis on instrumental procedures. One laboratory-lecture and two three-hour laboratories per week. Prerequisite: 344 and 345 and concurrent enrollment in 348.

352-4 Survey of Biological Chemistry. A survey of the chemistry and metabolism of biological compounds. A terminal course in biochemistry. Intended for students who have had a one-semester course in organic chemistry and who desire a one-semester survey of biological chemistry. Three lectures and one three-hour laboratory per week. Prerequisite: 340 and GSA 115.

375-0 to 2 Undergraduate Seminar. For juniors and seniors with a major in chemistry.

396-4 (2, 2) Chemical Problems. Chemical investigations under the direction and supervision of a faculty member. Prerequisite: consent of instructor and four semesters of chemistry laboratory.

411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds, and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: 462a, 463a; 462b or concurrent enrollment, 463b or concurrent enrollment.

412-2 Inorganic Preparations. Introduction to modern techniques of syntheses and compound characterization. Synthetic techniques include handling of air-sensitive materials, electrosyntheses, high-temperature reactions, and chemistry of non-aqueous solvents plus modern spectroscopic techniques for characterization. Prerequisite: 226, 347, and 349.

416-3 X-Ray Crystallography. (See Geology 416.) Prerequisite: 224 and 225, or 222b, one year of college physics and Mathematics 150.

431-4 Applied Analytical Chemistry. Practical applications of common instrumental and wet methods to the determinations of chemical substances in common natural and commercial materials. Techniques will include titrimetry; quantitative transfer of liquids and solids; gas, thin-layer, and ion-exchange chromatography; atomic absorption; flame photometry; ion selective electrode potentiometry; and spectrophotometry. The course is intended for senior-level and graduate students in disciplines other than chemistry who desire to know the practical aspects of laboratory measurements. The course is not applicable to a major in chemistry. One lecture, one laboratory-lecture, and two three-hour laboratories per week. Prerequisite: 224 and 225, or 222a,b, or nine hours of chemistry excluding general studies.

434-4 Instrumental Analytical Chemistry. Theory and practice of modern instrumental measurements, including emission and absorption spectroscopic, electroanalytical, and chromatographic methods, and an introduction to applied electronics. Two lectures and two three-hour laboratories per week. Prerequisite: one semester of physical chemistry concurrently.

435-3 Analytical Spectroscopic Characterizations. Spectroscopic methods for the study of molecules, especially including electron spectroscopy, mass spectrometry, and electron-spin-resonance spectroscopy. Three lectures per week. Prerequisite: 434 or equivalent, or consent of instructor.

436-3 Analytical Separations and Analyses. A study of the analyses of complex materials, usually inorganic, with emphasis on separations, functional-group chemical analyses, and instrumental applications. Two lectures and one three-hour laboratory per week. Prerequisite: 434 or equivalent, or consent of instructor.

446-3 Qualitative Organic Analysis. A systematic study of the separation and identification of organic compounds. One lecture and six hours of laboratory per week. Prerequisite: 226 and either 348 and 349 or consent of instructor.

450-4 Survey of Biochemistry. Function and metabolism of amino acids, proteins, enzymes, carbohydrates, lipids, and nucleic acids. For preprofessional students, chemistry majors, biology majors, and others desiring a terminal one-semester survey of biochemistry. Three lectures and one laboratory per week. Prerequisite: 346 and 347 or 348 and 349.

451-6 (3, 3) Biochemistry. (a) Chemistry and function of amino acids, proteins, and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Prerequisite: one year of organic chemistry.

455-4 Biochemistry Laboratory. Modern biochemical laboratory techniques for isolation, purification, and characterization of constituents of living cells and for investigations of pathways, kinetics, energetics, and regulatory mechanisms related to metabolism and enzymic activity. One lecture and eight hours of laboratory per week. Prerequisite: 451a, 226 or concurrent enrollment.

460-4 Principles of Physical Chemistry. A one-semester course in physical chemistry designed especially for non-chemistry majors. Not for those who intend to be professional chemists. Three lectures and one three-hour laboratory per week. Prerequisite: 226 and Mathematics 150.

462-6 (3, 3) Physical Chemistry. Three lectures per week. (a) Thermodynamics and its applications; chemical kinetics. Prerequisite: 226, Mathematics 251; concurrent enrollment in 463A; Mathematics 305 recommended. (b) Quantum mechanics of atoms and molecules; statistical thermodynamics. Prerequisite: 226, Mathematics 251; concurrent enrollment in 463B; Mathematics 305 and 406 recommended.

463-4 (2, 2) Physical Chemistry Laboratory. The sequence covers analysis of data, computational techniques, theory and practice of phenomenological kinetics and spectroscopy, and applications of thermodynamics. One three-hour laboratory and one hour of laboratory-lecture per week. (a) Prerequisite: 226, Mathematics 251; concurrent enrollment in 462a; Mathematics 305 recommended. (b) Prerequisite: 463a; concurrent enrollment in 462b; Mathematics 305 and 406 recommended.

466-3 Molecular Structure and Spectroscopy. An introduction to the principles of spectroscopy with emphasis on ir., Raman, n. m. r., and e. s. r. spectroscopy. Three lectures per week. Prerequisite: 462a, b.

471-2 Industrial Chemistry. A survey of modern industrial chemistry and an introduction to chemical research processes. Two lectures per week. Prerequisite: 346 and 347 or 348 and 349.

472-6 (3, 3) X-Ray Crystallography. (See Engineering Mechanics and Materials 402.) Prerequisite: 462b and 463b.

489-1 to 3 Special Topics in Chemistry. Topic to be announced by the department. Prerequisite: consent of instructor.

490-2 Chemical Literature. A description of the various sources of chemical information and the techniques for carrying out literature searches. Two lectures per week. Prerequisite: 224, 225, 346 and 347 or 348 and 349.

491-2 History of Chemistry. The evolution of chemistry from ancient times until 1920. Two lectures per week.

496-1 to 8 Undergraduate Research (Honors). Introduction to independent research under the direction of a faculty member culminating in a written report. Not for graduate credit. Prerequisite: a 3.0 grade point average, five semesters of chemistry laboratory including one semester of physical chemistry, consent of instructor and department chairman.

500-3 Structural Inorganic and Theoretical Organic Chemistry.

501-3 Kinetics and Thermodynamics.

502-2 Molecular Orbital Theory.

503-4 Applied Spectroscopy and Electronics.

511-6 (3, 3) Advanced Inorganic Chemistry.

519-2 to 9 (2 to 3 per semester) Advanced Topics in Inorganic Chemistry.

531-3 Theory of Chemical Analysis.

532-3 Analytical Chemistry Instrumentation.

534-3 Analytical Molecular Spectroscopy.

539-2 to 9 (2 to 3 per semester) Advanced Topics in Analytical Chemistry.

541-3 Advanced Organic Chemistry.

542-3 Advanced Organic Chemistry.

549-2 to 9 (2 to 3 per semester) Advanced Topics in Organic Chemistry.

556-7 (3, 4) Advanced Biochemistry.

559-2 to 9 (2 to 3 per semester) Selected Topics in Biochemistry.

561-3 Chemical Thermodynamics.

562-6 (3, 3) Quantum Chemistry Basic Principles.

563-3 Chemical Dynamics.

564-3 Statistical Thermodynamics.

569-2 to 9 (2 to 3 per semester) Advanced Topics in Physical Chemistry.

594-2 to 3 Special Readings in Chemistry.

595-1 Advanced Seminar in Chemistry.

598-1 to 50 (1 to 12 per semester) Research.

599-1 to 6 Thesis.

600-1 to 30 (2 to 12 per semester) Dissertation—Doctoral.

Child and Family (Department, Major, Courses)

Within a major in child and family, the department offers specialization in preschool programs.

Bachelor of Science Degree, College of Human Resources

CHILD AND FAMILY MAJOR—PRESCHOOL PROGRAMS SPECIALIZATION

These courses offer basic background leading to positions as nursery school director or teacher in private schools, colleges and universities, and day care centers; director or teacher in residential living facilities for exceptional children; child care specialists with social, public health and welfare agencies; home economics extension specialist in child care; and recreational leaders.

<i>Requirements for Major in Child and Family</i>	36
Child and Family 227, 237, 337, 345, 346, 366, 445, 456, 466, 471-6	33
Food and Nutrition 100	3
<i>Electives</i>	39
Recommended for Preschool Directors and Teachers: Child and Family 340, 408, 481, 490; Botany 390; Elementary Education 413; Instructional Materials 445; Art 348; Physical Education for Women 319; Special Education 400; Psychology 301; Music 303	
Recommended for Child Care Specialists in Social Services: Psychology 305, 459; Social Welfare 375, 383, 391; Family Economics and Management 340, 341, 370; Interior Design 131; Special Education 400; Sociology 426; Child and Family 408, 481, 490.	
Recommended for Residential Life Directors and Supervisors: Health Education 334; Special Education 400, 401, 402, 403; Speech Pathology and Audiology 104, 316; Music 302; Recrea- tion 300, 340; Social Welfare 375, 383; Psychology 301, 451.	
<i>Total</i>	120

Bachelor of Science Degree, College of Human Resources

CHILD AND FAMILY MAJOR—PRESCHOOL/EARLY CHILDHOOD CERTIFICATION SPECIALIZATION

The preschool/early childhood specialization has been specifically designed to prepare future teachers of children under six and will lead to certification by the State of Illinois. This program is jointly offered with the Department of Elementary Education in the College of Education.

<i>General Studies Requirements</i>	45
Including GSB 202, 212, GSE 201.	
<i>Requirements for Major in Child and Family</i>	55
Child and Family 227, 237, 240, 245, 337, 345, 466, 471-6	26
Elementary Education 203, 218, 317, 318, 413, 418, 445	21
Food and Nutrition 100	3
Music 303	2
Psychology 301	3
<i>Electives</i>	20
<i>Total</i>	120

Courses

227-3 Marriage and Family Living. A study of relationships and adjustments in family living, designed largely to help the individual. To help student better understand the recent changes that have occurred in marriage and the family in the United States.

237-3 Child Development. Principles of development and guidance of children as applied to home situations. Directed observation involving children of varying ages. Understanding the social, emotional, physical, and intellectual development of children.

240-2 Survey of Careers in Preschool Programs. A survey course to acquaint stu-

dents with the varied career opportunities, approaches to programming, and professional personnel in working with children under six. Field trips will be taken to area program centers. To be taken concurrently with 245 and Elementary Education 218.

245-3 Interpersonal Relationships Seminar. This course is designed with emphasis on realization of one's own potential in wholeness of his life pattern and in his relationships as preparation for work with children, parents, and professional peers. To be taken concurrently with 240 and Elementary Education 218.

337-3 Advanced Child Development. Examines the specific behaviors of both parents and teachers to determine the effects they have on the development of children's desirable and undesirable behavior. Prerequisite: 237.

340-3 Instructional Materials and Activities for the Preschool. Provides opportunities to acquire a working knowledge of the purposes of the various types of preschool centers; the roles of the personnel; basic teaching skills; curriculum areas, including objectives, activities, and evaluation; and basis for parent-teacher communication.

345-3 Child Development Practicum. Observation and participation in the guidance of preschool children in the daily routines, preparation and use of materials and equipment for activities. One hour lecture, three hours laboratory. Interaction and involvement with preschool children. Prerequisite: 237.

346-3 Child Development Practicum. Planning and executing a variety of experiences for preschool children. Three hours seminar, three hours laboratory. Development of skills in preschool management and curriculum development. Prerequisite: 345.

366-3 Family Development. Study of changing patterns in family living throughout the family life cycle. Insight into common current family problems typical of each stage of the family life cycle. Prerequisite: 227 or GSB 341.

408-3 to 9 (3, 3, 3) Workshop. Designed to aid workers in professions related to child and family. Emphasis for the workshop will be stated in the announcement of the course.

410-3 Human Sexuality. Provides detailed in-depth information on such topics as philosophical views of sexual behavior, sex techniques, sex therapy, sexual variations, sexual anatomy and physiology, including the sexual response and changes with age, and sexual development in childhood.

445-3 Philosophy, History, and Administration of Pre-Kindergarten Programs. Planning and organizing programs for preschool or residential facilities including budgeting, staffing, programming, and evaluation. Prerequisite: 345 and 346 or consent of instructor.

456-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

466-3 Practicum in Parent-Child Study. Designed to increase student's ability to work with parents and parent groups through an awareness of factors in the parent-child relationship and knowledge of current research and methods in parent education. Integration with infant and child development laboratories and related field experience. Prerequisite: 227, 237, or equivalent.

471-2 to 6 Field Experience. Supervised learning experiences in community nursery schools and public agencies. Prerequisite: consent of instructor.

481-1 to 3 Readings. Child development and family living readings under staff supervision. Prerequisite: consent of instructor and chairman.

490-3 Introduction to Marriage and Family. Problems and techniques of premarital, marital, divorce, family, and family crisis counseling. Counseling individuals singly, in family units, and in groups. Prerequisite: 227 or equivalent and consent of instructor.

500-3 Research Methods.

556-3 The Pre-School Child.

562-3 Child Development through Home and School.

566-3 Interpersonal Relationships within the Family.

571-3 Recent Research.

572-1 to 3 Special Problems.

599-1 to 4 Thesis.

Cinema and Photography (Department, Major, Courses)

Cinema and photography courses provide the undergraduate student with a substantial background in the history, theory, and practice of photographic communication. The program is structured to make available a strong foundation for professional, fine arts, and educational careers in film and photography; to explore the social implications of still and motion pictures; and to

provide opportunity for the study of both cinema and still photography as media for personal expression. In all instances, programs are tailored to the interests and career plans of the individual student.

The major in cinema and photography requires from 36 to 48 credit hours, depending on the specialization chosen by the student. Six specializations are available within the major: film production, film theory/history/criticism, fine arts photography, professional photography, cinema and photography, or photojournalism. The photojournalism sequence is administered jointly by the Department of Cinema and Photography and the School of Journalism.

To be admitted to the major, a student must have a grade point average of C or better. In order to remain in the specialization within the major, all required and/or prerequisite courses must be passed with a grade of C or better and, where applicable, with recommendation to continue in the specialization. Photographic portfolios and/or films must be submitted for entry into some courses. Grades below C will not be accepted as fulfilling major or specialization requirements. An overall grade point average of C or better must be maintained to remain in the department. All Mandatory Pass/Fail courses must be completed with a grade of Pass. Cinema and Photography courses are not available to majors on a pass/fail basis unless designated as Mandatory Pass/Fail.

A senior thesis, Cinema and Photography 499, or its equivalent in the film production specialization, is required of all cinema and photography majors. This thesis will consist of the preparation of a photographic portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. In the film production specialization only, with faculty approval, a student may substitute for the thesis a film produced as part of course work in Cinema and Photography 455 and 456. Normally taken during the last semester in residence, the senior thesis is evaluated on a Mandatory Pass/Fail basis by the departmental faculty. A copy of the thesis is to be provided for the department by the student.

Students provide photographic materials for all cinema and photography production courses. In still photography production courses, students supply their own film, photographic paper, certain specialized chemicals, a fully adjustable 35mm or 120 roll film camera, and \$5 additional cost for laboratory materials for each production course. In motion picture production courses, students provide their own film, processing, recording materials, and editing supplies. In courses which involve analysis and screening of a number of films, a cost of \$10 per course for screenings will be required.

The University reserves the right to retain examples of the work of each student in each photography class, to make and retain prints of all films made as part of course work other than thesis, and to retain copies of student papers. Such photographs, films, or papers become part of a permanent departmental collection.

There is no required minor.

Bachelor of Science Degree, College of Communications and Fine Arts

CINEMA AND PHOTOGRAPHY MAJOR—FILM PRODUCTION SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a</i>	
<i>Specialization in Film Production</i>	36
Cinema and Photography 350, 351, 355, 356, 360, 452, either	
455 and 456 or 499, and at least 11 additional hours	
selected from 400-level cinema courses if 455 and 456 are	

taken or 13 additional hours if 499 is selected. 36 hours minimum; 48 hours maximum in major.

<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—FILM HISTORY/THEORY/CRITICISM
SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Film History/Theory/Criticism</i>	36
Cinema and Photography 350, 351, 355, 360, 450, 451, 499, and at least 14 additional hours selected from the following: 453, 460, 461, 462, 463, 464, 491. 36 hours minimum; 48 hours maximum in major.	

<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—FINE ARTS PHOTOGRAPHY SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Fine Arts Photography</i>	36
Cinema and Photography 310, 311, 320, 322, 499 and at least 18 additional hours selected from the following: 411, 420, 421, 422, 425, 491, 495, 497. 36 hours minimum; 48 hours maximum in major.	

<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—PROFESSIONAL PHOTOGRAPHY SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Professional Photography</i>	36
Cinema and Photography 310, 311, 320, 322, 499 and at least 18 additional hours selected from the following: 403, 405, 406, 407, 408, 411, 415, 418, 491, 495, 497. 36 hours minimum; 48 hours maximum in major.	

<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—CINEMA/PHOTOGRAPHY SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for a Major in Cinema and Photography with a Specialization in Cinema/Photography</i>	48
Cinema and Photography 310, 311, 320, 322, 350, 351, 355, 356, 360, 499 and at least 14 additional hours selected from 400-level departmental courses. 48 hours minimum; 60 hours maximum in major.	

Electives 27

Total 120

CINEMA AND PHOTOGRAPHY MAJOR—PHOTOJOURNALISM SPECIALIZATION

General Studies Requirements 45

Requirements for a Major in Cinema and Photography with a
Specialization in Photojournalism 35

Cinema and Photography 310 or 311, 320, 322, 407, 408, 499,
Journalism 300, 310, 311, and at least 6 additional hours
in journalism courses. 35 hours minimum; 48 hours max-
imum in major.

Electives 40

Total 120

Courses

258-3 to 30 Work Experience. Used to recognize work experience in cinema and photography in the Southern Illinois University at Carbondale student work program. Three to 30 hours of credit may be applied toward graduation requirements following departmental evaluation and approval of the credit.

259-1 to 36 Technical Subjects. Used to recognize credit in cinema and photography earned in art, technical or trade schools above the high school level. One to 36 hours of credit may be applied toward graduation requirements following departmental evaluation and approval of the credit.

310-3 History of Still Photography. History, aesthetics and appreciation of still photography. Covers the period from 1839 to World War II. Students purchase texts. Elective Pass/Fail.

311-3 Contemporary Photography. Uses, styles and influences of contemporary still photography. Covers the period from World War II to the present. Students purchase texts. Elective Pass/Fail.

313-3 Introduction to Photojournalism. (See Journalism 313.)

320-4 Basic Photography. Introduction to photographic communication. Basic camera controls, black and white film and print processing, the use of 35 mm and large format cameras. Students purchase texts and provide photographic materials and chemicals. Each student must have available a fully adjustable camera. \$5 cost for additional laboratory materials. Elective Pass/Fail.

322-4 Color Photography. Theory, techniques and aesthetics of color photography. Production of color prints and transparencies. Students purchase texts and provide photographic materials and chemicals. Each student must have available a fully adjustable camera. \$5 cost for additional laboratory materials. Prerequisite: 320 and consent of department. Elective Pass/Fail.

350-2 The Film Industry. Study of production, business and distribution practices in the American film industry. Students purchase texts. Elective Pass/Fail.

351-3 Introduction to Motion Picture History and Theory. Survey of the history and theory of the cinema from the earliest silent films through the contemporary sound film. Emphasis on those films which highlight technological and theoretical history. Must be taken before or with 355. Screening fee. Students purchase texts. Elective Pass/Fail.

355-4 Film Production I. Basic techniques for film making. Production of Super 8 motion pictures. Students purchase texts, film stock and processing. Prerequisite: 351 or concurrent enrollment for majors. Elective Pass/Fail.

356-4 Film Production II. Techniques of 16mm double system sound film production. Production of films by individuals or crews. Students purchase texts, film stock, processing and sound materials. Prerequisite: 355 and consent of department. Elective Pass/Fail.

360-3 Film Analysis and Criticism. The relationships among structure, style and meaning in all types of films. Screening fee. Students purchase texts. Prerequisite: 351. Elective Pass/Fail.

403-3 Studio Portraiture. History, theory and practice of formal studio portrait photography. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

405-3 Commercial/Industrial Photography. History, theory and practice of commercial and industrial photography. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

406-3 Advertising/Illustrative Photography. History, theory and practice of photography as used for advertising, illustration and editorial purposes. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 405 and consent of department. Elective Pass/Fail.

407-3 Publications Photography I. History, theory and practice of photographic news reporting with emphasis on production and design of picture stories and essays. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 322 and/or consent of department. Elective Pass/Fail.

408-3 Publications Photography II. History, theory and production of picture essays, including research, lay-out, captions and text. Black and white and color. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 407 and/or consent of department. Elective Pass/Fail.

411-2 Photography and Society. Analysis of photography as a social communicative force through the study of research materials, images and philosophies. Students purchase texts. Prerequisite: consent of instructor. Elective Pass/Fail.

415-3 Technical and Scientific Photography. History, theory and application of photographic research methods in science, technology and medicine. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

418-3 Documentary Photography. Survey of the history and theory of documentary still photography. Production of documentary photographic essays dealing in depth with an aspect of contemporary life. Students purchase texts and provide photographic materials and chemicals. \$5 cost for additional laboratory materials. Prerequisite: 322 and/or consent of department. Elective Pass/Fail.

420-3 Experimental Camera Techniques. Experimental approaches to the creation of photographic images in the camera. Students purchase texts and provide photographic materials and chemicals. \$5 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

421-3 Experimental Darkroom Techniques. Experimental darkroom manipulations of the straight camera image. Students purchase texts and provide photographic materials and chemicals. \$5 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

422-3 Advanced Color Photography. Advanced study and production of color photographs with emphasis on experimental techniques using Dye Transfer, Kwik Proof and other forms of photo-mechanical reproduction. Students purchase texts and provide photographic materials and chemicals. \$5 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

425-3 to 9 Studio Workshop. An intensive workshop focusing on current trends in photography as a fine art. Students provide photographic materials and chemicals. \$5 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

450-3 Social History of the Cinema. Study of major social issues associated with the cinema. Examination of attempts to regulate and control the medium. Screening fee. Students purchase texts. Prerequisite: 350, 351 and consent of department. Elective Pass/Fail.

451-3 Advanced Film Theory. Study of the film theories of Munsterberg, Eisenstein, Kuleshov, Pudovkin, Arnheim, Balaz, Bazin, Kracauer, Wollen, Perkins and others. Films which pose particular theoretical problems as well as those which attempt to apply theory are studied. Screening fee. Students purchase texts. Prerequisite: 351, 360 or consent of department. Elective Pass/Fail.

452-3 Film Planning and Scripting. Analysis of both scripted and non-scripted films. Script as a basis for production. Practice in preparing film plans, treatments, storyboards and scripts. Students purchase texts. Prerequisite: 355 and/or consent of department. Elective Pass/Fail.

453-3 History and Techniques of Animated Film. Study of the history, techniques, and aesthetics of the graphic/animated film. Short projects in animated film production. Students purchase texts and materials. Screening fee, \$10. Prerequisite: 355 and consent of department. Elective Pass/Fail.

454-3 Graphic/Animated Film Production. Practical course for visual expression related to the graphic film; symbology, composition, kinestasis, animation, typography, color and materials. Students purchase texts and materials. Screening fee. Prerequisite: 453. Elective Pass/Fail.

455-3 Film Production III. Advanced production by individuals or crews of 16mm sound films from pre-production through shooting. Intensive study of budgeting, produc-

tion planning, scripting, casting, location and studio shooting techniques, equipment rental, lighting, and double system sound filming. Students provide film stock, processing and sound materials. Prerequisite: 356, 452 and consent of department. Elective Pass/Fail.

456-3 Film Production IV. Continuation of 455 through editing and post production to a first answer print. Intensive study of editing, sound mixing, laboratory procedures and distribution problems. Students provide expendable editing and sound materials and are responsible for laboratory costs. Prerequisite: 455 and consent of department. Elective Pass/Fail.

460-3 History of the Silent Narrative Film. Study of the theatrical film from its beginning to 1930. Screening fee. Students purchase texts. Prerequisite: 351 for cinema and photography majors. Elective Pass/Fail.

461-3 History of the Sound Narrative Film: 1927-1945. Study of the theatrical sound film from its beginnings to 1945. Screening fee. Students purchase texts. Prerequisite: 351 for cinema and photography majors. Elective Pass/Fail.

462-3 History of the Documentary Film. Study of the development of the non-fiction film with emphasis on the documentary. Screening fee. Students purchase texts. Prerequisite: 351 for cinema and photography majors. Elective Pass/Fail.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the century, through the avant garde periods, to contemporary independent films. Screening fee. Students purchase texts. Prerequisite: 351 for cinema and photography majors. Elective Pass/Fail.

464-3 History of the Sound Narrative Film: Contemporary. Study of the major movements in theatrical motion pictures from neo-realism to the present. Screening fee. Students purchase texts. Prerequisite: 351 for cinema and photography majors. Elective Pass/Fail.

491-1 to 9 Individual Study in Cinema or Photography. Research in history, theory or aesthetics. Usually taken 3,3,3. Prerequisite: consent of department. Elective Pass/Fail.

492-1 to 3 Practicum. Practical experience in the presentation of photographic theory and procedures. Not for graduate credit. Prerequisite: consent of department.

495-1 to 12 Internship in Cinema or Photography. Credit for internship with professional film or photographic units. Prerequisite: consent of department.

497-1 to 9 Projects in Cinema or Photography. Individual or crew projects in motion picture production or still photography. Usually taken 3,3,3. Prerequisite: consent of department. Elective Pass/Fail.

499-4 Senior Thesis. Preparation of a portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. Normally taken during last term in residence, the senior thesis is evaluated by the departmental faculty. A senior thesis is required of all majors with the following exception: a film completed in 456 may be submitted with approval of the cinema faculty to satisfy the requirements of a senior thesis. In this case, no course hour credit is given for 499. Senior thesis credit, 499, may not be applied to graduate work. The department will retain one copy of all theses. Prerequisite: consent of department. Mandatory Pass/Fail.

Clothing and Textiles (Department, Major, Courses)

The Department of Clothing and Textiles offers courses allowing for either of two undergraduate specializations: apparel design or retailing. The two specializations have the same General Studies requirements, home economics requirements, and clothing and textiles core. A special major may be planned with the approval of the department chairperson.

Bachelor of Science Degree, College of Human Resources

CLOTHING AND TEXTILES MAJOR—APPAREL DESIGN SPECIALIZATION

This specialization is intended for the student interested in professional preparation in apparel design or allied design positions in either industrial or commercial fashion businesses. The courses available to the student cover textile information, fashion design, and skills required for developing original designs into patterns and completed garments. Courses in the department are complemented by ones in art, business, and other areas in order to provide a suitable background for various career opportunities.

General Studies Requirements 45

Chemistry 140a (substitute) 4

GSB 202, 211 6

GSC 205 3

Requirements for Major in Clothing and Textiles 63

Home Economics Requirements: 3 courses, 1 in 3 of the following departments: child and family, family economics and management, food and nutrition, interior design, home economics education 5-10

Clothing and Textiles Core: 304a,b, 329, 340 8

Specialization Requirements: Clothing and Textiles 127b, 320, 334, 360, 410, 420, 430, 434 or 454; Art 100-8, 200, 207 38

Professional Electives 7-12

Choose from the following: any clothing and textiles or art courses; accounting, chemistry, finance, interior design, journalism, marketing, psychology, or other approved courses. Specific suggestions: Physiology 300; Physical education for Women 303; Theater 414, 415; Psychology 307; Family Economics and Management 451; GSC 204, 207, 349.

Electives 12

Total 120

CLOTHING AND TEXTILES MAJOR—RETAILING SPECIALIZATION

This specialization prepares the student for a profession in retail stores, either as buyers or department managers. Other related retailing positions are also available to students who complete the retailing specialization. The courses available to the student cover textile information, fashion merchandising, marketing, and other business-related courses.

General Studies Requirements 45

Chemistry 140a (substitute) 4

GSB 202, 211 6

GSC 205 3

Requirements for Major in Clothing and Textiles 63

Home Economics Requirements: 3 courses, 1 in 3 of the following departments; child and family, family economics and management, food and nutrition, home economics education, interior design 5-10

Clothing and Textiles Core: 304a,b, 329, 340 8

Specialization Requirements: Clothing and Textiles 319a, 349, 359, 439, 474, plus 5-6 hours of electives; Marketing 304 plus 6 hours of electives; Accounting 210 or 221; Interior

Design 300; 1 of the following: Administrative Sciences 301, 304, Psychology 320 or 323; 1 of the following: Electronic Data Processing 107, Computer Science 202, GSD 110 or 112 38

Professional Electives 7-12

Choose from the following: chemistry, clothing and textiles, finance, interior design, journalism, marketing, psychology, or other approved courses.

Electives 12

Total 120

Minor

A minor in clothing and textiles consists of 16 hours in clothing and textile courses which have been approved by the department chairperson.

Courses

Proficiency examinations are available for Clothing and Textiles 104 and 127a,b. Students will be expected to purchase their own materials in some of the courses offered by the Department of Clothing and Textiles.

104-2 Basic Textiles. Emphasis on recognition of fabrics and weaves, suitability, care, and maintenance, especially household textiles. Credit cannot be earned for both 104 and 304.

127A-2 Clothing Selection. Study of selection and care of clothing in relation to fabric composition, fashion emphases, art principles, suitability, and cost. Elective Pass/Fail.

127B-2 to 3 Clothing Construction. Basic construction laboratory utilizing self-paced instruction. Use of machine and pattern; fabric preparation; garment construction techniques. For beginning student. Elective Pass/Fail.

227-2 Creative Pattern Adaptation. Redesigning commercial patterns using flat pattern procedures; fitting; constructing garments using couture techniques. Prerequisite: 127B or proficiency. Elective Pass/Fail.

304A-2 Textiles. Selection of textiles from consumer standpoint. Characteristics of commonly used fibers and fabrics; textile information as a tool in the selection and care of household textiles and clothing. Prerequisite: Chemistry 140a.

304B-1 Textiles Lab. Introduction to textile laboratory equipment. Identification of fibers, fabric performance, care labeling. Prerequisite: 304A or equivalent or concurrent enrollment.

319-2 (1, 1) Retailing Seminar. Comparison of practices drawn from students' work experiences and information from readings or resource persons. Group project or study. Field trips. Prerequisite: 100 hours approved retailing experience.

320-5 Pattern Making—Tools and Processes. Fitting basic tissue or muslin and making sloper; fitting French lining cover; making patterns through flat pattern manipulation, draping, and drafting; testing and refining patterns. Prerequisite: 127B.

329-2 Fashion Motivation. Psychological motivation for wearing clothing; societal functions of clothing, cultural differences in dress.

334-2 Fashion Design. Original designs for male or female apparel and accessories using various media. Designs based on various sources of inspiration. Prerequisite: Art 100 or Interior Design 131.

340-3 Family Clothing. Clothing needs of individual family members within the context of developmental stage, life style and societal setting; functional and fashion-motivated needs considered; clothing budgeting.

349-3 Fashion Merchandising. Functions and responsibilities of the fashion merchandiser, considering various retail establishments. Professional course for retailing majors. Prerequisite: 319-1 and Marketing 304.

359-3 Apparel Accessories. Product knowledge, levels of quality, selling points, and care of plastics, leather goods, furs, jewelry, cosmetics, and functional apparel for both sexes, all ages. Elective Pass/Fail.

360-3 Tailoring. Basic principles of tailoring applied to coat or suit. Prerequisite: 127B.

371-1 to 6 Field Experience. Supervised learning experience in approved business or industry. Prerequisites: consent of chairman.

- 395-1 to 3 Special Problems.** Independent investigation of clothing, textiles or home furnishings in consultation with staff member and resource persons. Prerequisite: consent of chairman.
- 410-3 Experimental Apparel Designing.** Development of apparel to meet esthetic, structural, and functional needs; problem-solving for exceptional proportions, rehabilitation, activity, performing arts, new technology. Offered alternate years. Prerequisite: 227 or 320 or consent of chairman.
- 420-3 Custom Apparel Designing.** Flat pattern and draping approaches to evolve patterns for various designs, figure types, and fabrics; fitting; custom finishes. Emphasis on custom business. Prerequisite: 320 or equivalent.
- 430-3 Mass-Market Apparel Designing.** Design of a line to specifications; drafting; toiles; mass-production costs; work flow; use of industrial equipment. Field trips. Prerequisite: 320 or equivalent.
- 432-1 to 6 (1 to 3 per topic) Workshop.** Discussion and analysis of current topics in clothing and textiles. Emphasis stated in announcement. Maximum of three hours per topic. Prerequisite: eight hours in clothing and textiles.
- 434-3 Historic Clothing: Western Cultures.** Development of clothing in Western Civilization to the present time. Consideration of social, economic and esthetic factors and technical innovations influencing clothing. Offered alternate years. Prerequisite: 329.
- 439-3 Clothing Economics.** Factors of production, distribution, and consumption influencing clothing industry; management of these factors in clothing related businesses; place of clothing industry in national and international markets. Field trip. Prerequisite: GSB 211 or Economics 214.
- 454-3 Historic Clothing: Non-Western Cultures.** Traditional dress in non-western cultures. Esthetics, symbolism, and uses of costume in the culture; effect of clothing on economy. Cultures studied may vary with each offering. Offered alternate years. Prerequisite: GSB 202 or equivalent.
- 470-1 to 3 Seminar.** Topics considered at level of design room, research laboratory, mill, store, and consumer. Offered alternate years. Prerequisite: consent of chairman.
- 473-3 Advanced Tailoring.** Concepts developed during fitting and tailoring of male or female garment. Organization of work and time. Prerequisite: 360 or proficiency.
- 474-3 Experimental Textiles.** Physical and chemical analysis of textiles. Design of experiments, treatment of data, and interpretation of results. Prerequisite: 304 or equivalent.
- 490-1 to 3 Readings.** Supervised study of clothing and textiles literature in area of special interest. Prerequisite: senior standing or consent of chairman.
- 500-3 Research Methods.**
- 570-3 Seminar.**
- 574-3 Textile Equipment and Testing Method.**
- 582-3 Foundations of Fashion.**
- 583-2 College Teaching of Clothing and Textiles.**
- 592-1 to 6 Special Problems.**
- 597-1 to 3 Pilot Studies.**
- 599-1 to 6 Thesis.**

Commercial Graphics—Design (Program, Major, Courses)

The advertising business is a growing field, presenting ever increasing opportunities for men and women who have creative and artistic ability. Trained people are needed to develop story illustrations, advertising layouts, billboard design, window and point of purchase displays, greeting cards and direct mail pieces, annual report designs, television commercials, title cards and set designs, fashion illustrations, airbrush and photo retouching and many others.

Students in this program develop multiple art skills so that they may qualify for initial positions in many different areas of advertising art and design. Each individual has a base upon which to build his career according to his own special interests and talents.

Each graduating design student is required to have compiled a professionally acceptable portfolio of his work.

The student should expect to spend about \$460.00 for supplies, equipment, and materials.

An advisory committee whose members are active in the advertising and graphics professions serves the program. Current members are: Sam Laird, John Roberts, Inc., Austin, Texas; Rex McComas, offset supervisor, University of Oklahoma Press, Norman, Oklahoma; and J. R. Zinke, art supervisor, Bell Laboratories, Naperville, Illinois.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-instructional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Commercial Graphics-Design

GSB 202	3
GSD 101	3
Media Technology 213	2
School of Technical Careers 102, 153a,b	6
Commercial Graphics 110, 120, 122, 130, 132, 134, 210a,b, 215, 220, 230, 240	63
Total	77

Courses

103-4 Lithographic Stripping and Platemaking Laboratory. The student will apply imposition principles for offset in stripping line and halftone negatives, positives, combinations, surprints, double burns, tints and color blocks, step and repeat, burn plates, and produce printing on small presses. Prerequisite: concurrent enrollment in 127.

110-3 Art Appreciation—From the Cave to the Futuristic. The student will be able to recognize and identify at least thirty paintings and works of art and their creators from the cave man of 1500 B.C. to the contemporary designer and illustrators through the observations of color, composition, and technique. A field trip will be taken to an art museum. Lecture three hours.

120-6 Techniques of Figure and Freehand Drawing. The student will demonstrate his knowledge of the bones and muscles of the human anatomy by accurately drawing the figure from life. He will be able to draw the basics: sphere, cone, cylinder, cube, and show a complete understanding of perspective, light and shade, color mixing, use and harmonies. Lecture four hours. Laboratory three hours. Prerequisite: concurrent enrollment in 122.

122-6 Techniques of Graphic Design. The student will demonstrate his ability to use the T square, triangle, and drawing instruments in executing geometric forms, mechanical and industrial illustrations. In addition, the student will demonstrate his ability for fashion illustration, cartooning, scratchboard, doubletone and basic lettering principles. Lecture four hours. Laboratory three hours. Prerequisite: concurrent enrollment in 120.

126-2 Fundamentals of Drawing and Composition. For non-majors. The student will demonstrate his awareness of perspective, light and shade, color theory and application, and composition through basic drawing techniques. Lecture one hour. Laboratory two hours. Elective Pass/Fail.

127-2 Lithographic Stripping and Platemaking Theory. The student will pre-plan the darkroom procedures necessary to produce line and halftone negatives, positives, combinations, double burns, tints, color blocks, step and repeat, and apply nomenclature procedures to maintain a supply of materials for varied shelf life. Prerequisite: concurrent enrollment in 103.

128-2 Fundamentals of Graphic Processes. For non-majors. The student will prepare layouts, execute the mechanical, shoot the negative, strip the film, burn a plate and develop a working knowledge of a duplicator press. Lecture one hour. Laboratory two hours. Elective Pass/Fail.

130-3 Typographic Design. The student will be able to identify at least fourteen type faces, count and mark copy to be set, understand the history and practical use of typography in advertising and execute chisel point roughs and professional quality finished lettering. Lecture two hours. Laboratory two hours. Prerequisite: 120 and 122 and concurrent enrollment in 132 and 134.

132-3 Airbrush and Photo Retouching. The student will demonstrate his development of skills in the operation and techniques of airbrush rendering used for mechanical

and illustrative purposes. In addition, he will retouch black and white photographs suitable for reproduction. Lecture one hour. Laboratory three hours. Prerequisite: 120 and 122 and concurrent enrollment in 130 and 134.

134-6 Advertising Layout and Graphic Processes. The student will demonstrate his ability to use the basic principles of layout and how to do clean, accurate roughs and comprehensives. The student will also be able to explain several different kinds of printing processes such as letter press, offset, gravure, etc., and how paper is made and used in advertising today. He will prepare overlays and separations and do accurate paste-up and registration. He will receive actual experience with the camera and stripping in the printing laboratory. Lecture four hours. Laboratory three hours. Prerequisite: 120 and 122 and concurrent enrollment in 130 and 132.

201-4 Lithographic Photography Laboratory. The student will produce line and halftone negatives, tint screens, reverses contact prints, positives, posterization, process color, emphasis techniques and produce selected work on small presses. Prerequisite: concurrent enrollment in 225.

202-4 Offset Presswork Laboratory. The student will produce selected work on the Heidelberg KORA, including multiple imposition, four-color process, step and repeat, duotones, posterization and bindery. Prerequisite: concurrent enrollment in 226.

210A-8 Graphic Design and Advertising Illustration. The student will apply the techniques learned during the first year in the preparation of professional assignments in the area of magic marker comps in full color, two and three color logotype, letterheads, and folder design with production art and overlays. He will develop cartoons to be used in various styles of advertising illustrations. In addition, the student will have the opportunity to have his work selected for production on various in-house and outside publications. Lecture four hours. Laboratory six hours. Prerequisite: 130, 132, and 134 and concurrent enrollment in 215.

210B-8 Graphic Design and Advertising Illustration. The student will demonstrate advanced techniques in magazines and booklet cover design in three and four colors, with multiple solids and screens and develop all the production art. In addition, the student will have the opportunity to have his work selected for production on various in-house and outside publications. Lecture four hours. Laboratory six hours. Prerequisite: 210A and 215 and concurrent enrollment in 220.

215-8 Dimensional Design. The student will demonstrate his ability to conceptually order verbal information, to form a precise concept, and to express the concept visually in the execution of point-of-purchase displays, exhibits, and TV set design. The student will also show an ability to do package design. Lecture four hours. Laboratory six hours. Prerequisite: 132 and 134 and concurrent enrollment in 210A.

220-8 Experimental Graphic Design. The student will demonstrate his ability to create new and unusual techniques in the design of advertising and sales promotion booklets and annual reports. He will also develop a storyboard for a television commercial. Lecture four hours. Laboratory six hours. Prerequisite: 210A and 215 and concurrent enrollment in 210B.

225-2 Lithographic Photography Theory. The student will inventory, order, maintain supplies and materials essential to darkroom operations to produce the lab work. They will evaluate the emphasis techniques as they are produced on colored and textured paper stocks. Prerequisite: concurrent enrollment in 201.

226-2 Offset Presswork Theory. Students will pre-plan work for the KORA including imposition of various sheet sizes or half sizes, with advantages or disadvantages with relationship to bindery procedures of folding, cutting, scoring, and perforating. Prerequisite: concurrent enrollment in 202.

230-1 Job Orientation. The student will demonstrate a knowledge of the inside operations of large and small agencies and studios including the various responsibilities of the people employed in them by class discussion and examination. They will conclude this course with the presentation of a professional quality portfolio and will have acquired the experiences of being interviewed for an initial position. Lecture one hour.

240-3 to 12 Special Study. A student with a special interest in a particular advertising art or graphic design area will do selected projects and research to develop additional professional skill. Requires approval of the program supervisor. Lecture three hours. Laboratory 24 hours maximum.

Commercial Graphics—Production (Program)

(ALSO SEE COMMERCIAL GRAPHICS—DESIGN)

Opportunities abound in the printing and publishing field for trained production specialists and persons with both mechanical skills and management ability.

The School of Technical Careers currently is developing innovative approaches to education in this field which allow the student to build a program of relevant courses drawn from diverse areas of offerings so that he may meet the challenge of emerging technologies which are revolutionizing the publishing industry. The student who wishes to enter this program will work with an adviser in planning a course of study which meets his individual needs and University requirements.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Community Development (Department, Major [Graduate only], Minor, Courses)

In recognition of major national legislation in community development and the growing need for informed leaders and trained practitioners at the community level in many fields, this minor has been developed.

Requirements: 15 semester hours, at least 9 of which must be selected from community development courses and 6 from community development courses or from courses closely related to the community development field offered in other departments. A list of approved courses is available from the department office. If a student is receiving credit in his major for any of these courses, they may not also be counted toward his community development minor.

Courses

200-3 The Nature of Community. Human communities have existed since pre-history, but the nature of what a community is, should, or could be remains a subject of wide debate. The purpose of this course is to clarify some of the issues of this debate by examining some of the ways that communities have changed since prehistoric times as well as the different philosophies and theories of community, both past and present, and also by identifying those aspects and elements of community life that appear common to all human communities. Elective Pass/Fail.

201-3 Experimental and Intentional Communities. Throughout recorded history various individuals have envisioned, and various groups have deliberately sought to establish, communities that differed greatly from the conventional communities of the time. Some, like the medieval monastic orders or the "Bruderhoffs" of today, have been remarkably durable; but many have failed. In this course, the history and philosophy of experimental and intentional communities from monasteries to communes will be reviewed with the object of better understanding the social conditions that give birth to such communities and those conditions that appear to either enable or inhibit their survival. Elective Pass/Fail.

202-3 Communities of the Future. The focus of this course will be on technology presently under development which presents problems and solutions to the creation and maintenance of human settlements and the interdependence of social, cultural, and economic elements. Problems of crime, disease, health, moral issues, government control, population, migration, and others will be explored against a background of innovative technical and social ideas. The human organism's potential in the evolutionary process of life altered by man-made environments will serve as a background to discussions. Elective Pass/Fail.

302-3 Community Self-Study. The origins and development of the self-study approach to community development in the United States will be traced and the major approaches and programs contained in the community self-study movement will be reviewed. Special attention will be given to the implications the self-study method holds for definitions of leadership and power, status and role, planning and development. Late historical developments in the utilization of the self-study approach for social programs such as the "war on poverty" and the resurgence of "grass roots" self-study in urban areas will be examined as well as rural small town and area usage of the method. Elective Pass/Fail.

401-3 Introduction to Community Development. This survey course is designed to provide a general understanding of community development. It includes an analysis of the history, values and techniques of various approaches to community development and explores some of the specific social issues and problems which confront community development practitioners. Elective Pass/Fail.

- 402-3 Comparative Community Development.** Surveys the historic, economic, organizational and other aspects of international community development programs under the auspices of world and regional agencies or of multi-national, national or local sponsorship, focusing primarily upon specific case studies. Elective Pass/Fail.
- 403-3 Consumer Participation in Human Services Delivery Programs.** Examines consumer participation in human services delivery in four major areas: government-sponsored agencies, advocacy organizations, para-professional services and professionally staffed volunteer agencies. Concepts of consumer participation, history and dynamics of consumer movements, case studies. Elective Pass/Fail.
- 404-3 Role Analysis: Application to Developmental Contexts.** The overall emphasis of this course is on the use and application of role theory and research findings generated from this orientation to an analysis of community developmental contexts and settings. The student will gain considerable exposure to the use of the "person-behavior matrix" to evaluate the relations between role expectations and role performances, that is, the relations between community consultant and client systems. Not for graduate credit.
- 491-1 to 6 Independent Study in Community Development.** Supervised individual study and projects in fitting with the needs of each student. Prerequisite: consent of instructor. Elective Pass/Fail.
- 497-1 to 12 (1 to 3 per topic) Seminar in Community Development.** The identification and analysis of special problems in CD. (a) Planning in CD; (b) Preparing project proposals; (c) Center-periphery relations and CD; (d) Consumer cooperatives and CD; (e) Research problems in CD; (f) CD methods—research design and inference; (g) Special problems. Credit limited to not more than three per topic and not more than 12 total. Elective Pass/Fail.
- 500-3 Research Seminar in Community Development.**
- 501-4 Small Group Process in Community Development.**
- 502-3 Community and Change.**
- 503-3 Problems of and Approaches to Community Development.**
- 593-1 to 6 Individual Research in Community Development.**
- 595-1 to 9 Internship.**
- 599-1 to 6 Thesis Research.**

Comparative Literature (Minor)

A comparative literature minor is available within the College of Liberal Arts. The program is directed by the comparative literature adviser in either the Department of English or the Department of Foreign Languages and Literatures. The minor consists of 18 hours of course work at or above the 300-level in literatures other than those in which the student is majoring.

Computer Science (Department, Major, Courses)

The Department of Computer Science offers courses covering the major areas of computer science. These courses constitute the basis for an undergraduate major which prepares students for professional and technical careers in government and industry or for graduate work leading to advanced degrees. In addition, the department offers an undergraduate minor and service courses for students from other fields who will use computer science as a tool in their own areas. Students interested in computer science will be advised with respect to computer science courses by the department so they may profitably pursue their academic and professional interests.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements	0-15
The hours required will depend on the choice of options in meeting college and department requirements.	

<i>Requirements for Major in Computer Science</i>	54
Computer Science 202, 302, 342, 403, 411, each	
with a grade of C or better	16
Computer Science 401 or 414	3
Computer Science 361 or 464a	3
Two of the following: Computer Science 430, 445, 451, 470, 471,	
472. (471 and 472 may not both be used)	6
Mathematics 150, 250, 221	11
Mathematics 280 or 480 or 483	3-4
Technical electives which have the approval of	
the department	9
English 290 or equivalent	3
<i>Electives</i>	5-21
<i>Total</i>	120

Minor

A minor consists of Computer Science 202, 302, 403, and six additional computer science hours of which three must be at 400 level. The total number of hours required is sixteen.

Courses

- 202-3 Introduction to Computer Programming.** An introduction to computers and programming including a discussion of algorithms, flowcharts, data representation, structure and debugging of programs, computers and languages. Primary emphasis will be given to the solution of computational problems using an algorithmic language introduced for that purpose. Nonnumeric applications will also be considered. Prerequisite: completion of the General Studies mathematics requirement or equivalent.
- 302-4 Assembly Language Programming.** Basic computer organization: central processing unit, memory and input/output. Internal data representation. Addressing schemes and machine instruction formats. An extensive treatment of a specific assembly language, including macros. Program organization, segmentation and linkage. Prerequisite: 202.
- 311-1 to 27 (1 to 9, 1 to 9, 1 to 9) Laboratory in Programming Languages and Applications.** Treatments of various programming languages and applications with extensive programming practice. (f) Programming Techniques in FORTRAN IV (l) List and String Processing Languages (p) PL/1 and ALGOL. Need not be taken in sequence. Prerequisite: 202.
- 312-3 COBOL and Business Data Processing.** COBOL and its use in business data processing. Prerequisite: 202.
- 342-3 Introduction to Discrete Structures.** (Same as Math 301.) Sets and set operations. Functions and their properties. Binary relations including equivalence relations and order relations. Relational systems including monoids and graphs. Applications to computer science. Prerequisite: Mathematics 111 or consent of department.
- 361-3 Numerical Calculus.** (Same as Math 361.) Algorithms for the solution of numerical problems encountered in scientific research work with special emphasis on the use of digital computers. Includes an elementary discussion of error, polynomial interpolation, quadrature, solution of nonlinear equations and linear systems, solution of differential equations. Prerequisite: 202 and Mathematics 150.
- 401-3 Computer Organization.** Computer main frame architecture; control unit, arithmetic/logic unit, memory, other features. Input/output devices, mass storage devices, channels, and communications equipment. Computer system configurations design and comparison. Prerequisite: 302.
- 403-3 Information Structures.** Lists, trees, garbage collection, dynamic storage allocation, storage systems and structures, symbol tables and searching, sorting. Prerequisite: 302.
- 411-3 Programming Languages.** Study of the significant features of existing programming languages with particular emphasis on the underlying concepts abstracted from these languages. Includes formal specification of syntax and semantics, representa-

tion and evaluation of simple statements, grouping of statements, scopes and storage—allocation, subroutines. Covers algebraic, list processing, and string manipulation languages. Prerequisite: 302.

414-3 Introduction to Systems Programming. Operating systems: batch, multiprogramming, multiprocessing, and time-sharing systems. Specific treatment of one operating system with respect to scheduling, program initiation, memory allocation, CPU allocation, and input/output control. Structure of a two-pass assembler and a relocating program loader. Interpretive systems and the structure of compilers. Description of system support utility programs. Prerequisite: 403.

430-3 File Organization. Organization of records and blocks. Design of files, file systems, and access methods. File maintenance, sorting and searching. Techniques for creating and using hashed files. Applications of file searching and data management systems. Prerequisite: 403.

445-3 Applied Boolean Algebra. (Same as Mathematics 445.) Boolean algebras with applications to logic and circuit theory. Simplification algorithms. Sequential circuits and sequential machines. Prerequisite: 342 or Mathematics 301, or Mathematics 319.

449-3 Combinatorics and Graph Theory. (Same as Mathematics 449.) An introduction to graph theory and combinatorial mathematics with computing applications. Topics include permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory, block designs. Prerequisite: 202 and 342.

451-3 Introduction to the Theory of Computation. (Same as Mathematics 451.) Sequential machines and automata. Regular expressions and characterization of the behavior of automata. Turing machines and recursive functions. The concept of an algorithm. Introduction to formal grammars and formal languages. Relationship of formal grammars and machines. Prerequisite: 445.

464-6 (3, 3) Numerical Analysis. (Same as Mathematics 475.) An introduction to the theory and practice of computation with special emphasis on methods useful with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Must be taken in a,b sequence. Prerequisite: 202, Mathematics 250, and Mathematics 221.

470-3 Computer Simulation Techniques. Applications and rationale. Methodology, including generation and testing of sequences of random numbers. Design and analysis of computer simulation models. Simulation languages. Prerequisite: 202 and Mathematics 150.

471-3 Introduction to Optimization Techniques. (Same as Mathematics 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 202, Mathematics 221, and Mathematics 250.

472-3 Linear Programming. (Same as Mathematics 472.) Development of the simplex method. Design of models. Introduction to duality theory. Transportation problems. Network flow problems. Postoptimality problems. Applications. Prerequisite: 202 and either Mathematics 221 or Mathematics 141.

490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Prerequisite: consent of instructor and department.

491-1 to 4 Special Topics. Selected advanced topics from the various fields of computer science. Prerequisite: consent of instructor.

492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Prerequisite: consent of department.

493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Prerequisite: consent of instructor.

501-3 Advanced Computer Organization.

514-3 Advanced Systems Programming.

516-3 Compiler Construction.

531-3 Text Processing and Retrieval Systems.

536-3 Artificial Intelligence and Heuristic Programming.

553-3 Formal Languages and Automata.

555-3 Theory of Computability.

564-3 to 9 (3, 3, 3) Advanced Numerical Analysis.

590-1 to 9 Readings.

591-1 to 9 (1 to 3 per topic) Special Topics.

592-1 to 6 (1 to 3 per semester) Special Problems.

593-1 to 4 Seminar.

599-1 to 5 Thesis.

Construction Technology—Building (Program, Major)

(ALSO SEE CONSTRUCTION TECHNOLOGY—CIVIL)

The construction technology—building curriculum is designed to meet the needs of the construction industry. The technician must be able to talk the language of the industry and interpret instructions. He must also be capable of working in the area between the architect and the craftsmen who are expected to carry out the mandates of the design. The program provides sufficient theory and laboratory work so that the graduate can perform in areas of design, drafting, construction methods, estimating, and surveying.

The curriculum is designed to accept both new freshmen and transfer students. Students entering with industrial experience or courses taken in the military will be given credit by proficiency or transcript evaluation.

The student should expect to spend about \$60.00 for instruments and supplies.

The program is served by an advisory committee whose members have extensive experience in the field. Current members are: Hobart Beasley, Beasley Lumber Co., Cambria; Frederick H. Persson, Steffes Construction Co., Carterville; Donald W. Hutton, the Reasor Corp., IBC Homes, Charleston; and D. Leo Robinson, J & L Robinson Development and Construction Co., Carbondale.

Graduates of this program may find employment as construction engineering aids, assistants to a contractor supervisor, building materials salesmen, inspectors, and estimators.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Construction Technology—Building

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b	10
Secretarial and Office Specialties 105a	3
Construction Technology 102a, 103a, 104, 110, 111, 125a,b 208, 210, 211, 213a	51
Electives (in Humanities and Social Science)	6
<hr/>	
Total	73

Construction Technology—Civil (Program, Major, Courses)

The construction technology—civil curriculum is designed to produce a technician who can, under supervision, perform many of the specialized tasks required to coordinate and guide a construction project from the planning stage to a satisfactory completion. Technical training is provided in surveying, materials of construction, construction methods, equipment, planning, estimating, design, and drafting.

Credit may be obtained for relevant courses or work experience by transcript evaluation or proficiency examination.

The student should expect to spend approximately \$120.00 for instruments and supplies.

B. J. Schwegman of Clark, Dietz and Associates, consulting engineers, Carbondale, and M. P. Bertoux of the Illinois Department of Transportation, Springfield, serve on an advisory committee which assists this program.

Career opportunities exist primarily with heavy construction oriented organizations: governmental units engaged in providing public works such as highways, airports, and conservation projects; contractors; consulting engineers; industrial organizations; material suppliers and testing laboratories.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Construction Technology-Civil

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b	10
Construction Technology 101a,b, 102a,b, 103a,b, 125a,b, 201, 203, 207, 208, 213a,b	53
Elective (in Humanities or Social Science)	3

Total 69

Courses

101-14 (7, 7) Surveying. The student will be able to make observations, prepare field notes, and make field checks using equipment usually encountered in plane surveying. He will be able to reduce field notes and present the results in a form which is understandable to others using the desk calculator, planimeter, slide rule, and drawing instruments as required. He will know techniques employed in construction layout. (a) Horizontal distance, leveling, the transit, traverses, elementary triangulation, surveys for maps, stadia and photogrammetry, construction surveys. Lecture three hours, laboratory six hours. (b) Surveying computations, areas, volumes; error theory, earth-work, horizontal curves, vertical curves, slope staking, ties, construction tolerances, elements of land surveying, state plane coordinate systems. Must be taken in a,b sequence or by consent of instructor. Lecture three hours, laboratory six hours.

102-8 (4, 4) Drafting. The student will acquire the basic skills necessary for more advanced drafting work. He will then specialize in drafting techniques used in the preparation of working drawings for steel and concrete structures. (a) Lettering, line work, geometrical constructions, drawing layout, dimensioning, orthographic projection, sections, auxiliary views, surface intersections, surface development, isometric drawing, oblique drawing, elements of structural drafting. Lecture two hours, laboratory four hours. (b) Preparation of working drawings for steel and concrete structures from given design data. Lecture two hours, laboratory four hours.

103-8 (4, 4) Construction Materials. The student will obtain knowledge of production methods, physical properties, uses, installation methods, advantages and disadvantages, together with relative costs of materials frequently used in construction. Using given test procedures, he will be able to perform tests on concrete materials and soils which are required for on-site control. (a) Concrete materials including laboratory, wood, ferrous metals, bituminous materials, soil cement, nonferrous metals, stone, masonry, concrete proportioning, introduction to reinforced concrete. Lecture two hours, laboratory three hours. (b) Soils including laboratory, elementary soil mechanics, foundations, other building materials including plastic, glass, insulation, building boards, protective coatings. Lecture two hours, laboratory three hours.

104-4 Building Construction Surveying. The student will be able to give line and grade for elementary construction layout using the tape, transit, and level or equivalent equipment. He will also be able to make surveying observations required for the preparation of a site plant. Lecture two hours, laboratory three hours.

110-7 Basic Construction I. The student will acquire the skills and knowledge necessary to enable him to safely operate basic woodworking machines, identify the common commercial wood species, and apply basic methods of testing wood and other wood-based materials. Lecture two hours, laboratory nine hours.

111-7 Basic Construction II. The student will acquire the skills and knowledge

necessary to enable him to demonstrate his abilities in light frame construction, electrical wiring methods, and small tool maintenance and repair. Lecture two hours, laboratory nine hours. Prerequisite: 110 or consent of instructor.

125-6 (3, 3) Statics and Strength of Materials. The student will learn fundamental concepts which are necessary in order to understand terms continually used in civil technology. (a) Force systems, strength of materials, friction, connections, thin wall, pressure vessels. Lecture three hours. (b) Beam design, torsion, shafts, couplings, keys, combined stresses, columns, statically indeterminate members. Lecture three hours.

201-3 Advanced Surveying. The student will develop the ability to organize a small field party, make field observations using techniques consistent with given survey requirements, and present results in a form useful to others. Comprehensive problems will be assigned which include traverses, triangulation, topography and field astronomy. Laboratory and homework in addition to regularly scheduled class time will be required. Lecture two hours, laboratory two hours. Prerequisite: 101 or consent of instructor.

203-3 Hydraulics and Drainage. The student will have sufficient technical background to perform inspection functions on projects where static and moving liquids are being controlled. Under supervision, he will be able to make small area surface run-off and drainage structure computations. Subjects studied are: static pressures, flow in open channels and pressure conduits, surface run-off, drainage structures. Lecture three hours.

207-3 Construction Planning, Methods, and Equipment. The student will have basic knowledge of construction management functions, primarily from the point of view of the contractor. He will be able to assist in the preparation of work schedules, requests for progress payments and the evaluation of alternate methods of construction. Systematic problem-solving procedures based on factual data are emphasized. Lecture three hours. Elective Pass/Fail.

208-3 Construction Cost Estimating. The student will be able to assist in the preparation of construction cost estimates. Actual working drawings and specifications are used extensively. Emphasis is on quantity take-off and the development of unit costs from given or derived data. Lecture three hours.

210-7 Advanced Construction I. The student will acquire the skills and knowledge to enable him to perform advanced operations in light frame, prefab, and modular construction. Lecture three hours, laboratory six hours. Prerequisite: 111 or consent of instructor.

211-7 Advanced Construction II. The student will acquire the skills and knowledge to enable him to demonstrate his competency in the preservation and finishing of building materials, plumbing and pipefitting as it relates to domestic and other buildings, concrete forming methods; and block and bricklaying techniques. Lecture three hours, laboratory six hours. Prerequisite: 210 or consent of instructor.

213-5 (2, 3) Structural Design. Sufficient design background is provided for supervision of field construction techniques to insure that the intentions of the drawings and specifications are fulfilled. (a) Pertinent provisions in the American Institute of Steel Construction-Manual of Steel Construction are emphasized. Lecture two hours. (b) Similar to (a), but the American Concrete Institute-Building Code Requirements for Reinforced Concrete is used. Lecture three hours.

Consumer Studies (Minor)

(SEE FAMILY ECONOMICS AND MANAGEMENT)

Correctional Services (Program, Major)

(ALSO SEE LAW ENFORCEMENT)

A growing demand for trained correctional workers is being created by increasing emphasis on rehabilitation of criminal offenders. These people are needed both in institutions and in community-based corrections.

This correctional services program has the two-fold purpose of providing a broad-based social science type curriculum to both the person entering the field and to presently employed personnel who wish to upgrade skills for advancement opportunities.

The student will learn the nature and effects of crime on both the perpetrator and the victim, methods used to combat crime in modern society, and various approaches to rehabilitation of the offender. He will spend one term in supervised internship working in a correctional institution or with a correctional agency.

Persons already employed in the correctional field may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their work schedules.

Professionals in the field serve on an advisory committee which assists in the program. Current members are: Warden Thomas Israel, Illinois State Penitentiary at Menard; Warden Vernon Housewright, Vienna Correctional Center; Warden Ralph L. Aaron, United States Penitentiary at Marion; Dr. Champ Brahe, director, Southern Illinois Work Release Center, Carbondale; Associate Circuit Judge William Lewis, Anna; and Joseph Coughlin, Center for the Study of Crime, Delinquency and Corrections, Southern Illinois University at Carbondale.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Correctional Services

GSB 202, 203, 212	11
GSD 101, 153	5
Political Science 213	3
School of Technical Careers 102	2
Sociology 372	4
Correctional Services/Law Enforcement 103, 104, 105, 106, 107, 115, 209, 210, 215, 217, 220	39
Electives	3
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Total	67

(COURSES ARE LISTED UNDER CORRECTIONAL SERVICES/LAW ENFORCEMENT)

Correctional Services/Law Enforcement (Courses)

Courses

- 103-3 Introduction to Criminal Justice. Enables the student to understand the workings of the criminal justice system and is the foundation course for the law enforcement program. Upon completion of this course, the student will have an understanding of the processes from arrest through imprisonment enabling him to assimilate progressive courses such as criminal law and criminal behavioral theories. Lecture three hours.
- 104-3 Treatment Methods for Line Personnel. Enables the student to understand the treatment methods utilized by line or custodial personnel in correctional agencies. Upon completion of this course the student will be able to utilize his newly learned skills in a treatment practicum available in local correctional institutions. Lecture three hours.
- 105-3 Criminal Behavior. Will enable the student to understand the psychological and sociological forces that make up criminal behavior. Upon completion of this course the student will have the knowledge to complete his studies of the behavioral field in other disciplines of the university such as criminology. Lecture three hours.
- 106-3 Treatment Practicum. Will enable the student to apply the techniques learned in 104 in actual therapeutic groups in area correctional institutes. Upon completion of this course the student will be prepared to assist in leadership of therapeutic or treat-

ment modalities and will have the ability to use them during the course of his custodial assignment.

107-3 Special Problems in Criminal Justice. Will enable the student to examine controversial issues facing the criminal justice system. The student will discuss and comment on police corruption, politics and the police, victimless crimes, and plea bargaining using present day issues as a discussion guide. The forces at work in the community that present major obstacles to effective law enforcement and an effective and cooperative effort in criminal justice will be discussed. Lecture three hours.

115-3 Interpersonal Relations in Criminal Justice. A delineation of the major patterns characteristic of relationships between pre-delinquents, juvenile and adult offenders, and staff of community based programs; analysis of theory, and the means of encouraging the development of internalized controls by offenders within the community. Analysis of fundamental problems of police and correctional officers when situations call for persuasive techniques; discussion of problems pertinent to motivating voluntary law observance, and the development of skills necessary for positive interaction with individuals in the free society or within a setting of incarceration. Lecture, three hours.

205-3 Survey of Crime Detection Methods. Enables the student to examine the major theories and techniques of criminal investigation. Upon completion of the course, the student will have an understanding of the techniques of criminal investigation and how these techniques can be applied to various types of investigations. The student will have learned the value of adequate preservation, collection, and handling of physical evidence. Lecture three hours. Prerequisite: 103, 209.

209-3 Criminal Law I. Enables the student to understand the due process functions of the criminal law. Upon completion of this course the student will be able to use a law library and will have an understanding of the laws of arrest, search and seizure, and evidence including recent Supreme Court decisions affecting his daily work assignments. This course is also a foundation for Criminal Law II where the substantive law is covered. Lecture three hours.

210-3 Criminal Law II. Will enable the student to apply the law of due process (constitutional law) to the study of substantive law including Illinois state penal code and the Illinois Corrections Code. Upon completion of this course the student will have a working knowledge of how both the penal and corrections codes of the state enables society to successfully prosecute violators of the law. The student will also be able to brief cases pertaining to criminal and correctional law. Lecture three hours. Prerequisite: 209.

215-9 Internship in Criminal Justice Practice. The pre-service student will be exposed to the operations of a criminal justice agency through an eight-week internship in that agency under supervision. Upon completion of his internship the student will have been exposed to all aspects of the agency and reinforce the student's attitudes toward that particular area of criminal justice. (Internship—40 hours per week. Eight weeks.)

217-3 Correctional Administration. Will enable the student to examine the administrator's role in corrections including budgeting, personnel, and police guidelines. Upon completion of this course the student will have the fundamental skills necessary for middle management personnel. Lecture three hours. Prerequisite: 103.

220-3 Probation, Parole, and Community Based Corrections. Will enable the student to understand the concept of alternatives to incarceration. The benefits and workings of probation and parole will be examined and the student will be exposed to the casework method utilized in these areas. The student will learn of alternatives to incarceration that are community based and of the need for community involvement and support for these efforts. Lecture three hours. Prerequisite: 103.

221-4 Police Administration. Will enable the student to understand the administrator's role in law enforcement through examination of the concepts of policing including budgets, patrol tactics and personnel policies. Upon completion of this course the student will have the foundation for advanced studies in administration. Lecture four hours. Prerequisite: 103

Dance (Minor)

(SEE PHYSICAL EDUCATION FOR WOMEN)

Dental Hygiene (Program, Major, Courses)

This program of study is designed to prepare the student to successfully enter the health profession of dental hygiene. Upon completion of the program, the

graduate should be capable of passing the written National Board Examination and the clinical practical examination in the state in which he wishes to practice.

The primary role of the dental hygienist is education and prevention of oral disease. Therefore, he must have a basic knowledge of the human body and a detailed knowledge of the oral cavity. The student develops skill, dexterity, and use of judgment in procedures relating to preventive dentistry on clinical patients scheduled in the dental hygiene clinic. Services provided by the dental hygienist are regulated by state laws which vary among the states, but all include the services of scaling and polishing teeth, x-ray examination, patient education and nutritional counseling, application of preventive medicaments, administrative procedures, chairside assisting, and some laboratory techniques. All the services must be performed under the supervision of a dentist.

Since the curriculum includes many science courses the entering student should have a thorough background in the basic sciences including chemistry, biology, and general sciences. Facilities limit enrollment to 38 students admitted only in the fall semester. Additional application information is required other than that required for admission to the University, including the results of the Dental Hygiene Aptitude Test. This test should be taken at the fall testing date a year prior to the fall semester of admission. Additional expenses of approximately \$490 are required to cover the cost of instruments, uniforms, insurance, and other items in addition to textbooks.

The program is served by an advisory committee made of practicing dentists and dental hygienists. Current members are: Stanley P. Hazen, DDS, dean, School of Dental Medicine, Southern Illinois University at Edwardsville; William J. Greek, DDS, executive secretary, Illinois State Dental Society, Springfield; William Maurer, DDS, dental consultant, Illinois Regional Health Office; Clifford G. Neill, DDS, Carbondale; Arthur L. Lenzini, DDS, Herrin; Charles G. White, DDS, president, Southern Illinois Dental Society, Eldorado; Betty Lacy, RDH, Decatur; Sandra Blankenship, RDH, Herrin; Ann Stark, RDH, Veterans' Administration Hospital, Marion; and Phillip Fitts, DDS, director of dental health, Veterans' Administration Hospital, Marion.

A licensed dental hygienist may be employed in private practice offices, in school systems, in industrial health clinics, as civil service employees in government agencies or, with additional education, as a teacher in dental hygiene schools, in public health, in research, in administration, or as a commissioned officer in the armed services.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Dental Hygiene

GSA 208, 209	4
GSB 202, 203	7
GSD 101, 153 and 117 or 118 or 119.....	7
Chemistry 140a,b	8
Microbiology 301	4
Physiology 301	4
Dental Hygiene 133, 136, 137a,b, 138, 201, 210a,b,c, 211a,b,c, 215, 217, 218a,b, 220, 240, 241	49
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Total	83

Courses

133-2 Histology and Embryology. The student will learn the microscopic components of the primary tissue groups of the human body and will be expected to identify microscopically in detail, the dental tissues of the oral cavity. The course also enables the student to relate the embryonic development of the head to the normal and abnormal structures of the adult head and oral cavity. Lecture two hours.

136-4 Cranial and Oral Anatomy. During the first part of the course, the student will study the detailed anatomic structures of the head and neck including skull, muscles, nerves, and blood supply. Following this, the student will learn to recognize and identify in detail the structures within the oral cavity including the tongue, salivary glands, lips and cheeks, and cheeks and teeth, both permanent and primary. Lecture three hours. Laboratory three hours.

137-8 (4, 4) Pre-Clinical Dental Hygiene. (a) The student is introduced to the profession of dentistry with emphasis on the role and duties of a hygienist. Basic skills and techniques of instrumentation will be acquired using manikins in the laboratory followed by clinical experience on selected patients. Included will be didactic instruction in normal and abnormal tissue conditions, the role, function, and structure of calculus deposits. Additional skills, techniques, and procedures include clinical rules and procedures, aseptic technique, patient and operator positioning, rules of professionalism. Lecture two hours. Laboratory four hours. (b) The student will continue to apply information and skills learned in (a) on selected patients with varying oral hygiene needs. New information, procedures, and skills will be introduced during the course with the student expected to master one area before proceeding to the next. Included are complete health histories, office emergencies, charting for deposits and tissue conditions, auxiliary scaling instruments, rationale and techniques of polishing. The ability to perform basic dental health education and manage patients with specific physical and mental problems will be developed. Lecture two hours. Laboratory four hours. Must be taken in a,b sequence.

138-3 Pathology. The student will learn to recognize the appearance, causes, and body's responses to pathological conditions including congenital disorders, circulatory, and neurological ailments, tumors and neoplasms. Special attention will be placed on pathological conditions of the oral cavity including dental caries, periodontal disorders and lesions of the hard and soft tissues. The student will apply this knowledge by giving intra and extra oral examinations on selected patients and recording the findings. Lecture two hours. Prerequisite: 218a,b.

201-4 Dental Materials and Assisting Techniques. The student will study the physical and chemical properties of various dental materials used in dental practice including plaster and stone, impression materials, synthetic resins, metals and cements. In the laboratory the student will manipulate those dental materials and recognize the effects of proper and improper techniques. Emphasis will be placed on dental assisting techniques for both operator and laboratory in the generalist and specialist type of practices. Lecture three hours. Laboratory three hours. Prerequisite: inorganic chemistry.

210-15 (3, 6, 6) Clinical Dental Hygiene. (a) The student will perform the professional services of a hygienist of designated clinical patients and be expected to demonstrate improvement in skills covered in 137a,b. Additional skills incorporated into clinical procedures include application of fluoride gels, maintenance and sharpening of scaling instruments, recognition and detection of carious lesions, extended home care education, auxiliary polishing devices, caries etiology tests and nutritional counseling. (Laboratory nine hours, eight weeks.) (b) The student continues clinical experience and is expected to show improvement in skills and abilities. Additional procedures include application of stannous fluoride, patient control programs, complete charting of the oral cavity, care of dental prosthesis. Additional clinical experience is provided in the Model Cities clinic and Public Health mobile van. Laboratory twelve hours. (c) Clinical experience is continued with the student expected to demonstrate advanced skills and abilities and to make necessary judgments as to the patient's dental needs. Additional procedures include use of ultra-sonic cleaning devices, polishing restorations, care of hypersensitive teeth, deep scaling and root planing, measurement of periodontal pockets, maintenance of dental equipment, impressions for study models. Laboratory twelve hours. Must be taken in a,b,c sequence. Prerequisite: 137a,b.

211-3 (1, 1, 1) Clinic Seminar. Theoretical content is presented covering procedures and techniques incorporated into the concurrent clinic course. Additional requirements include in (a) Dental specialties presented through guest lecturers with two abstracts of published articles relating to those specialties. (Lecture two hours, eight weeks.) In (b) reports on Model Cities assignments and outside activity experiences with a research paper on some phase of dentistry. Lecture one hour. In (c) assignment of papers on patient problems which incorporate and correlate course material from preceding courses. Lecture one hour. Prerequisite: concurrent enrollment in 210a,b,c.

215-2 Ethics, Jurisprudence, and Office Management. The student will identify

the rules of conduct and behavior that a dentist and hygienist must adhere to, differentiate between ethical and unethical, legal and illegal behavior in the dental profession. Professional and legal responsibilities and obligations are discussed. The student will also study interrelationships of office personnel, interviewing and job application procedures. (Lecture four hours, eight weeks.)

217-3 Dental Health Education and Nutrition. The student will apply psychological concepts to patient dental health education, prepare dental health teaching units using various teaching aids, and apply his knowledge of health and disease in counseling with dental patients. The student will identify the food sources of nutrients, recommended quantities for maintaining health, and relate the information to the nutritional management of dental problems. (Lecture six hours, eight weeks.) Prerequisite: organic and biochemistry.

218-4 (2, 2) Dental Radiology. (a) The student will learn the techniques of exposing, processing, and mounting bitewing and periapical dental x-ray surveys. He will learn how x-rays are produced, hazards and precautions in using x-ray equipment, and the chemical composition and action of processing solutions on x-ray film. In the laboratory, the student will receive individual assistance in learning the techniques of exposing and processing films. (Lecture three hours. Laboratory three hours. Eight weeks.) Prerequisite: inorganic chemistry. (b) The student will learn special dental survey techniques including paralleling, occlusal, and special views. He will identify anatomical landmarks and recognize appearance of pathological conditions as viewed on dental x-rays. In the laboratory the student will receive assistance in learning special survey techniques. Lecture one hour. Laboratory two hours. Must be taken in a,b sequence. Prerequisite: 136.

220-2 Dental Public Health and the Community. The student will learn the objectives and principles of public health dentistry, the organization of community health programs, the basis of scientific investigation, community preventive measures, manpower resources, and purchased dental care plans. Guest lecturers and field trips are utilized. The student will also participate in an assigned community dental health project. Lecture two hours.

240-2 Dental Pharmacology and Anesthesia. The student will recognize the various types of drugs, their actions and effects on tissues of the body. Special emphasis will be placed on those drugs most commonly prescribed by the dentist. The student will study the anesthetics commonly used in a dental office and the techniques of administering them. Lecture two hours. Prerequisite: chemistry, physiology.

241-1 Advanced Periodontology. The student will be introduced to the specialty of periodontics, including such topics as the classification, etiology, and treatment of periodontal disease. Clinically, the student will perform a complete examination, root planing, and subgingival curettage for the periodontal patient as presented in theory in this course. Consideration will also be given to special adaptations and recommendations of oral physiotherapy for the periodontal patient.

Dental Laboratory Technology (Program, Major, Courses)

The dental laboratory technology program prepares the student to be a competent dental technician in the commercial laboratory, an educational institution, a dental manufacturing company, or the private dental office. To implement the goal, the prospective student must satisfactorily meet the requirements of courses in both the dental laboratory area and in the science, business, and humanities area.

Persons interested in careers in dental technology should have a sincere interest in working with their hands and find satisfaction in their creative work.

Any student who has met the entrance requirements of Southern Illinois University at Carbondale and who sincerely wants a career in dental technology has an equal opportunity for enrollment into the program.

An advisory committee whose members are drawn from the profession and from educational institutions serves the program. Current members are: Virgil Beadle, Sr., DDS, Carbondale; James D. Harrison, DDS, director of dental auxiliaries, School of Dental Medicine, Southern Illinois University at Edwardsville; Jack Piper, Modern Materials Manufacturing Co., St. Louis, Mis-

souri; Tilghman S. Tade, CDT, Tade Dental Laboratory, Belleville; Larry E. Worthey, University Dental Laboratory, Edwardsville; William Cotton, DDS, U.S. Naval Dental Research Institute, Great Lakes; Andrew Larson, executive director, Illinois Dental Lab Association, Northfield; and Raymond J. Zepp, Jelenko Co., Florissant, Missouri.

Graduates of the two-year dental laboratory technology program find that career opportunities are excellent. The trained dental technician not only has a wide choice of geographic location for the pursuit of his career, but he can also choose his working conditions. Graduates are employed by commercial dental laboratories, dental schools, dental supply companies, private dental offices, or are self-employed in their own dental laboratories.

The student should expect to spend about \$350.00 for a tool kit, supplies, and other items.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirement for Major in Dental Laboratory Technology

GSD 101, 153	5
School of Technical Careers 102, 104, 115a, 141	9
Dental Laboratory Technology 102, 103a,b, 104a,b, 105, 113a,b, 128, 143, 202, 203, 204a,b, 206a,b, 208	61

Total 75

Courses

102-4.5 Tooth Anatomy Theory and Laboratory. The student will be able to: write definitions of the nomenclature of teeth and their supportive structures; draw five different peripheral views of maxillary and mandibular teeth; carve maxillary and mandibular teeth in plaster, three times natural size and in wax, natural size. Lecture three hours. Laboratory 17 hours. Five weeks.

103A-4.5 Complete Dentures Theory and Laboratory. The student will be able to: write the steps of denture construction; identify and use impressive materials, lab stone and lab plaster, acrylic resins, and articulators, namely the Hanau Model H and Whip-Mix; construct edentulous casts, individual trays, base plates, occlusal rims; and mount casts on the above named articulators. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 105.

103B-4.5 Advanced Complete Dentures Theory and Laboratory. The student will be able to: describe the theory inherent in all phases of full denture construction; set up teeth on the Hanau, Whip-Mix, and Simplex articulators; select and set teeth for different classes of arch forms; wax, invest, process and finish full dentures; rebase, reline, duplicate, and repair full dentures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103A.

104A-4.5 Removable Partial Dentures Theory and Laboratory. The student will be able to: write the basic steps of partial denture construction; identify and use impression materials, laboratory stones, plaster, surveyors, waxes, and different types or forms of artificial teeth; construct and mount master casts, survey and design partial denture cases, and arrange teeth. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103B.

104B-4.5 Advanced Removable Partial Denture Theory and Laboratory. The student will be able to: describe and do the planning, designing, and surveying of partial dentures; construct a refractory cast, wax, invest, and finish partial denture frameworks; set up artificial teeth on the partial frames; and, repair broken partial. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 104A.

105-4.5 Dental Occlusion Theory and Laboratory. The student will be able to: draw peripheral views of maxillary and mandibular teeth, and identify the occlusal anatomy; write and identify the functions of the muscles of mastication including origins and insertions; write and identify the anatomy and function of the temporomandibular joint including ligaments; write and identify the nomenclature of occlusion; write and identify

the theory inherent in occlusion; wax a maxillary and mandibular quadrant in cusp marginal ridge occlusion and cusp fossa occlusion; and, wax a natural full mount rehabilitation case using the principles of occlusion discussed in lecture. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

113A-2 Science of Dental Materials. The student will be able to: identify orally, as well as written, the uses and composition of dental gypsum products, namely, plaster, stones, and investments, impression materials, dental resins, dental cements, polishing agents, abrasives, and dental waxes. Lecture two hours.

113B-2 Science of Dental Materials. The student will be able to identify orally, as well as written, the physical and mechanical properties of metals and alloys, namely, dental golds, chrome cobalt alloys, and nickel cobalt alloys; the control of their physical properties, namely, strain hardening, alloying and heat treatment, the chemistry of tarnish and corrosion, gypsum investments for inlay procedures, casting and soldering techniques, and dental porcelains. Lecture two hours.

128-1 Oral Anatomy. The student will be able to identify the anatomical features of the head and oral cavity; identify the blood and nerve supply to the oral cavity and area; be able to list the muscles of mastication, and know the origin and insertion of each muscle; identify the anatomical parts of the maxilla and mandible; differentiate the movements of the mandible; and be able to identify the temporomandibular articulations. Lecture one hour.

143-1 Orientation to Dental Technology. The student will be able to: identify the specialties of dental technology; identify opportunities for the dental technician in the large laboratories versus the small laboratories or the dental office; identify the differences in laboratory prices from different parts of the country, and what determines laboratory prices; write, and orally report, on a term project resulting from an interview with a dental technician, who is a laboratory owner, or who is working as a technician in a dental laboratory. Lecture one hour.

202-1 Professional Ethics. The student will be able to differentiate between the organizations affecting dental laboratories; be able to identify the industry and its members, and to identify the ethics necessary in dealing and cooperating with the dental profession. He will know the legal requirements of the technician and the dental laboratory. Lecture one hour.

203-4.5 Dental Orthodontics and Pedodontics Theory and Laboratory. The student will be able to: fabricate a maxillary hawley, a mandibular hawley, holding arch, spare maintainer, suture opener, tongue spikes, tongue crib, occlusal-palatal splint, space regainer, stabilizing plate, and bite planes and obturator; operate the soldering machine and equipment associated with it; write the gauges of wires that are used for the orthodontic appliances; and write the theory that is associated with the fabrication of the above named appliances. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 104B.

204A-4.5 Beginning Crown and Bridge Theory and Laboratory. The student will be able to: write the definitions of the nomenclature of beginning crown and bridge prosthetics; communicate orally, as well as written, the theory that is necessary for successful completion of the laboratory projects; construct amalgam, stone and copper plated dies; construct master and working casts; construct full and veneer crowns, acrylic jackets, inlays and onlays; and operate and maintain crown and bridge laboratory equipment. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 203.

204B-4.5 Advanced Crown and Bridge Theory and Laboratory. The student will be able to: write definitions of the nomenclature of advanced crown and bridge; identify soldering and heat treatment techniques; differentiate between different types of pontics, waxing, venting, and spruing techniques; write the theory inherent in broken stress bridgework, Steele's facing bridgework, telescope bridgework, and cantilever bridgework; list and perform techniques in crown and bridge repair; identify causes and remedies for porosity, open margins, and general casting failure in crown and bridge construction; and, construct a six-unit maxillary Steele's facing bridge, a five-unit broken stress bridge, and an eight unit telescope bridge. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 204A.

206A-4.5 Dental Ceramics Theory and Laboratory. The student will be able to: write definitions of the nomenclature of ceramics; identify porcelain constituents; identify the parts of the porcelain furnace and their use; construct platinum matrices; and, construct six maxillary porcelain jackets. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 208.

206B-4.5 Advanced Dental Ceramics Theory and Laboratory. The student will be able to: draw substructure design for single and multiple unit bridgework; write the theory of color control, demonstrate the uses and maintenance of porcelain equipment, construct single and multiple unit porcelain to gold bridgework; and, demonstrate a working knowledge of staining and shade control. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 206A.

208-4.5 Precision Attachments Theory and Laboratory. The student will be able to: identify examples of the five classes of attachments; intracoronal, extracoronal, stud, bar, and auxilliary attachments; write the theory for the correct use of each class of attachments; and, construct precision attachment cases using the Sterns Gingival Latch, the Ney Mortice, and the Ney Mini attachments. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 204B.

Design (Department, Major, Courses)

The faculty and students of the Department of Design are an academic unit within the College of Human Resources.

The department defines "design" as devising innovative courses of action to change existing situations into preferred situations. This definition translated into the educational purpose of the Department of Design means that our prime responsibility is to develop within our participants generalized abilities to cope creatively with multi-faceted design problems.

The department recognizes as a goal the maintenance of an educational experience which fosters in individuals a sensitivity and openness to himself and his environment through an integration of design skills with problem-solving strategies and concepts relevant to present and future events. In addition, our students and faculty engage in socially useful design research and provide appropriate services to the University and the community.

Bachelor of Arts Degree, College of Human Resources

<i>General Studies Requirements</i>	45
GSA (three areas)	9
GSB (three areas)	9
GSC (three areas) including GSC 205	12
GSD	11
GSE	4
 <i>Requirements for Major in Design</i>	62
Design 300 level: 3 hours each from 5 of the 10 areas; balance in areas of specialization. Design 201 may be substituted for one area	32
Design 400 level: from at least 2 of the 10 areas	30
 <i>Electives</i>	13
300 level courses or above outside Department of Design. May include General Studies courses.	

Total 120
Students must have a minimum 2.0 grade point average and it is recommended that they earn a grade of *B* or better in GSC 205, Design 120, and Design 201 to be admitted as a major in design.

Courses

Students will be expected to purchase their own materials in some of the courses offered by the Department of Design.

101-3 Introduction of System Approach to Design. Course material covers the historical foundations of general systems theory and the search for universal principles underlying all open systems. The student is introduced to a unique set of principles for problem solving which apply to all aspects of the design process. Specific design problems

will be used to demonstrate how the principles can be generally applied to a large variety of design functions, including the selection of alternatives and the optimization of the final product.

120-3 Introduction to Design. Survey of the philosophy of the Department of Design and readings on contemporary design practice. Team taught with weekly lectures and projects.

201-10 (5, 5) Design Fundamentals. Dialogue, problems, and experimentation are used to illuminate the creative problem-solving processes and fundamental technical skills of the designer. The individual engages in a variety of projects dealing with such subjects as visual communications, environmental planning, structures, and product design.

310-3 Basic Materials and Process Exploration. Introduction to tools and skills used in the manipulation of wood, metal, and plastics. Emphasis is placed on prototyping and model building.

311-3 Fundamentals of Visual Design. Introduction to the tools and techniques of visual communication and processes involved in two-dimensional design solutions.

320-3 Problem-Solving Strategy. Development of capability for creating logical strategies and evaluation techniques as a means of finding creative solutions to design problems.

330-3 Photography for Designers. Introduction to photographic techniques and media as a tool for the designer.

332-3 VTR for Designers. Introduction to video tape recording as a design tool.

335-3 Basic Visual Communication. Exploration in visual communication with emphasis on experimentation and various methods of print. Projects directed toward development through all phases of graphics—from problem-solving to production of finished art.

340-3 Introduction to Computer Graphics. Introduction to the concepts and methods used to produce computer graphics in the form of engineering drawing, perspectives, and animation.

350-3 Three-Dimensional Studies. An introduction to the orderly subdivision of three-dimensional space and its application to structures.

351-3 Structural Studies. An introduction to some of the methods by which a predetermined form may be stabilized and their potential application in structures.

354-3 Human Settlement—Theory for Design. A critical appraisal of the failure of most urban networks to cope with the issues of human settlement as a design for either present or future. The establishing of criteria to guide us in a search for more serviceable patterns.

360-3 Artifacts and Modern Society. Analysis of existing products and their effect on people in modern society. The development of new solutions to significant human needs.

362-3 Introduction to Environmental Design. Development of technical skills—visual and verbal communications, research, and problem-solving as related to environmental design. Projects will deal with human interaction to a variety of both interior and exterior environments.

365-4 The Design of Unique Environments. A pragmatic design course emphasizing the design of special environments, eg., environments for the handicapped, the blind, paraplegics, the elderly, etc., based upon systems principles. Students have the option of selecting their own projects which they carry through from the conceptual stage to construction of models. Prerequisite: 101.

371-3 Systems Theory in Design. A non-mathematical approach to the subject of systems theory. Philosophical assumptions underlying the unity of systems are examined. Functional similarities that are valid for all systems are demonstrated using practical examples drawn from a wide variety of disciplines, including design. A universal model of systems is presented and practice is given in its application to design problems. The student acquires a problem-solving technique designed to enhance and release his creative potential. The methodology presented may be applied to a wide variety of disciplines. Prerequisite: 365.

385-3 Introduction to Design Science. Introduction to the language, concepts, and principles of comprehensive anticipatory design science, with special reference to the philosophy, theory and methods of R. Buckminster Fuller.

391-3 Undergraduate Seminar. Special projects developed by adjunct and visiting professors. Prerequisite: consent of department.

399-2 to 4 Independent Study. Creative project developed by student and faculty sponsor and approved by department chairman. Prerequisite: consent of department.

405-6 Workshop in Group Design Problem Solving. Integration of workshops in innovation strategies, conflict management and team building, sensorial perception enhancement with real time socially relevant problem solving. Not for graduate credit.

410-3 Advanced Materials and Techniques. Analysis of materials used in shelter design—steel, concrete, wood, and plastics. Selection and use of these materials for

maximum efficiency and economy. Not for graduate credit. Prerequisite: 310.

420-3 Portfolio and Display Techniques. Professional opportunities for the designer related to each student's background, educational, and occupational skills will be explored. Students will be assisted in preparing: a resume, portfolio, letter of introduction, and a list of potential employers. Not for graduate credit.

430-6 (3, 3) Advanced Visual Design. Advanced work in visual design, with emphasis on creative research, and experimental design solutions to two- and three-dimensional communication problems. Not for graduate credit. Prerequisite: 335 or consent of instructor.

435-12 (6, 6) Human Communications Design Laboratory. Exploration and visual design as applied to various media of communication. Comprehensive projects dealing with the utilization of various communication media. Special emphasis on video tape recording production. Not for graduate credit.

445-12 (6, 6) Computer Graphics Laboratory. Creative utilization of existing computer programs; designing graphic qualities in the final output and learning to direct resources economically toward a successful end product; i.e., plots, documents, slides, film, etc. Not for graduate credit. Prerequisite: 335 and 340 or consent of instructor.

462-12 (6, 6) Environmental Design. Practical experience on both interior and exterior environments. Emphasis on expansion of conceptual ability, designer-client relationships, team projects, and professional standards. Not for graduate credit. Prerequisite: 362 or consent of instructor.

464-12 (6, 6) Human Settlement—Practice of Design. Using the theoretical criteria already developed, to study and propose design outlines to future patterns of human settlement. Not for graduate credit.

471-4 Seminar in General Systems Theory. A discussion group devoted to evaluating the historical and contemporary trends in general systems theory. Material covered ranges from von Bertalanffy's seminal books to current literature in the field. Subjects covered include systems discoveries in biology, physics, and the social sciences with an emphasis on their application to the design field. Students are required to read designated material in preparation for class discussion. Format of class is informal and interactive. Not for graduate credit. Prerequisite: 371.

485-12 (6, 6) Design Science Laboratory. Application of the philosophy, theory, and methods of comprehensive anticipatory design science with selected problems related to the World Game Concept of R. Buckminster Fuller. Not for graduate credit. Prerequisite: 385 or concurrent enrollment.

490-1 to 6 Integrative Readings. Assigned readings in books and periodicals surveying the theory and practice of contemporary design. Not for graduate credit. Prerequisite: design major or consent of department.

491-3 to 18 Senior Seminar in Design. Special projects in design developed with adjunct and visiting professors. Not for graduate credit. Prerequisite: consent of department.

496-3 to 9 Special Problems in Design. Independent design project developed by student in conjunction with faculty sponsor and approved by department chairman. Not for graduate credit. Prerequisite: consent of department.

499-3 to 9 Senior Honors Research. Research projects for senior honors students developed by the student and faculty sponsor and approved by department chairman. Not for graduate credit. Prerequisite: consent of instructor.

Early Childhood Education (Major)

(SEE ELEMENTARY EDUCATION)

Earth Science (Minor)

This course of study is designed for the student with an interest in the interdependent dynamic processes that take place on and near the earth's surface. At present the program is structured to complement a major in another discipline. This work may be taken through the College of Liberal Arts, the College of Science, or the College of Education.

A minor in earth science consists of a core program of 15-17 hours and 7 to 9 hours of electives, as follows:

Core Program 15-17

GSA 110, GSA 330 or Geography 331 and Geography 302

Plant and Soil Science 346 or GSA 312

Geology 221 or 374, 400

Electives 7-9

Appropriate substitutions may be made with the approval of the adviser.

GSA 322, 240

Agricultural Industries 347

Geography 310, 432A, 432B, 424, 438

Geology 425

Plant and Soil Science 240

Economics (Department, Major, Courses)

The study of economics provides a useful means of analyzing the behavior of consumers, businesses, and government so that the student can better understand many of the problems facing contemporary society. Majoring in economics gives the student an analytical ability and flexibility that is attractive to a wide range of employers in both business and government. Economics is also an excellent major for students who are considering graduate school in law, business, or any of the social sciences.

A student can major in economics in the College of Liberal Arts, the College of Business and Administration, or the College of Education. The economics major in the College of Liberal Arts provides the most flexible program with 29 hours of electives and a 15-hour minor or distribution requirement. This flexibility allows the student to follow a program oriented toward a wide range of careers in government and business or to prepare himself for graduate study in any of several areas. The business economics major in the College of Business and Administration emphasizes the use of economic analysis to solve managerial problems and thus provides the student with an excellent background for a variety of positions in business and government. The economics major in the College of Education is offered for students who are planning to teach social sciences at the secondary school level.

Economics courses at the 300 level generally require only a limited background in introductory economics, while many economics courses at the 400 level require Economics 340 (440) and 341 (441) as prerequisites. A student considering graduate study in economics should take Economics 340 and 341 as early in his college career as possible and should choose several courses at the 400 level to complete his major requirements. A student considering graduate study in economics should also plan to take Mathematics 139 and 140 or 111 and 150 (the latter two courses are better preparation for additional courses in mathematics).

Students are urged to discuss their major programs with the director of undergraduate studies or with any other professor in the Department of Economics; the department also has a director of career information and placement available for consultation.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements 45

Supplementary College Requirements 15

Requirements for Major in Economics 31

Economics 214, 215, 340, 341, 308	16
Any five remaining economics courses except 301, 490	15
<i>Electives</i>	29
<i>Total</i>	120

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45
<i>Professional Business Core (See page 64)</i>	47
<i>Requirements for Major in Business Economics</i>	15-18
Administrative Sciences or Economics 479	3
Economics 315, 340, 341	9
Finance 475	(3) ¹
Two courses from the following list, one of which must be in economics	3-6
Economics 310, 330, 329, 436, 443, 465, 467	
Accounting 341, 365, 405	
Administrative Sciences 345, 352, 361	
Finance 323, 325, 480	
Marketing 335, 341, 390, 495	
<i>Electives</i>	10-13
<i>Total</i>	120

¹ Hours shown in parentheses are already included in total of hours shown for professional business core.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Economics</i>	32
Economics 214, 215, 340, 341	12
GSD 110	2
Any additional 18 hours in economics excluding 301	18
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Electives</i>	19
<i>Total</i>	120

Minor

For students majoring in other departments, a minor in economics is useful for employment in business or government and for graduate work in any of the social sciences, law, or business. The minor requires 15 hours of work in economics including Economics 214 and 215. Approval of the minor program by the director of undergraduate studies is required in order to assist the student in designing a coherent program to meet his individual interests.

Courses

214-3 Introduction to Macroeconomics. Determination of income, employment, output and price levels in the national economy; government taxation, expenditure, and monetary policies to solve problems such as inflation and unemployment. Elective Pass/Fail.

215-3 Introduction to Microeconomics. Study of businesses, consumers and the government and their effects on prices, output and income distribution. Current economic problems will be used as illustrative examples. Elective Pass/Fail.

300-3 to 9 Contemporary Economic Problems. A study of one or more contemporary economic problems. Problems chosen vary from semester to semester and the topic will be announced in advance. Prerequisite: 214, 215 or GSB 211 or consent of instructor. Elective Pass/Fail.

301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more faculty members. Periodic written and oral reports. Prerequisite: consent of instructor and department chairman. Elective Pass/Fail.

303-3 Poverty and the Economy. Poverty as a study of income inequality. Economic determinants of income inequality are isolated and related to current policy proposals. Elective Pass/Fail.

304-3 Economics of the Welfare State. Analysis of programs and proposals attacking poverty, insecurity, inequality of opportunity, and maldistribution of income. Analyzes such programs as social security, unemployment compensation, medical care, income maintenance, public assistance, housing, and job creation. Economic foundations and consequences are linked with social and political problems. Elective Pass/Fail.

308-4 Economic and Business Statistics. Survey of the foundations and applications of the principal statistical methods used in economic and business decision making. Included are probability theory, probability distributions, and testing of hypotheses about, and estimation of, the important types of population parameters. Elective Pass/Fail.

310-3 Labor Problems. Covers the basics of the job market with emphasis on the outlook for college trained personnel, the kinds of jobs available in the economy and how people train for them, the composition of the labor force, union-management relations in the private and public sectors and the government's role in the labor market and in union-management relations. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

315-3 Money and Banking I. Study of the operation of the money and banking system in the United States. Stresses Federal Reserve control of the money supply and credit conditions to combat inflation and unemployment. Monetary arrangements and problems among nations are also considered. Prerequisite: 214. Elective Pass/Fail.

318-3 Economic History of Europe. The economic growth and development of the European economies from the middle ages to the common market. Topics include the rise of the market system, the development of capitalism and the systematic growth of European economic integration. Prerequisite: 214 or GSB 311 or consent of instructor. Elective Pass/Fail.

320-3 Economic History of the United States. The dynamic process of American economic growth and development from its colonial beginnings to its status as world economic power. Particular emphasis is given to the changing role of the United States in the developing world economy and the contribution of changing economic institutions to the character and pace of American economic growth. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

322-3 Introduction to Economic Development. An analysis of the preconditions, processes, and problems involved in economic development. Both the theory and policy relevant to development, with special emphasis on the developing or emerging economies, are stressed. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.

323-2 Operation of Public Utilities. (Same as Engineering Technology 323.) The study of public utilities regulation, electrical utility, load factors, rates fixed, and operating costs, power plant economics, and distribution policy. Prerequisite: GSB 211 or consent of instructor. Elective Pass/Fail.

329-3 Introduction to International Economics. Introduction to the principles of international economics. Stresses the relationship between the balance of payments and the United States economy, the determinants of deficits and surpluses, and policy options to correct an imbalance. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.

330-3 Public Finance. Effects of government spending and taxing activities on the rest of the economy. Analysis of government debt, the federal budgetary process, and various taxes used in the United States. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

333-3 Economics of the Environment. Factors which lead to physical and human deterioration in a market economy. Consideration of solutions to such problems as urban decay, overpopulation, and pollution. Prerequisite: 214, 215. Elective Pass/Fail.

340-3 Intermediate Microeconomics. A survey of theories of household, firm, and government economic behavior in the determination of competitive and non-competitive

market prices. Emphasis is on understanding the United States economic system and on evaluating existing and proposed government microeconomic policies designed to improve the system. Not open to students who have had Economics 440. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

341-3 Intermediate Macroeconomics. The determinants of fluctuations in aggregate economic activity, unemployment and inflation. An analysis of the behavior of consumption and investment, the impact of government monetary and fiscal policies, and factors affecting the rate of economic growth. Not open to students who have had Economics 441. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

350-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust, and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen, and Keynes are highlighted, and major schools of economic thought are identified. Prerequisite: 214 and 215; or GSB 211; or consent of instructor. Elective Pass/Fail.

361-3 Regional and Urban Economics. A survey of regional and urban economic growth and the associated problems, including disparities among regions in income and employment. Examination of governmental policies aimed at reducing or eliminating such problems as depressed areas and urban blight. Prerequisite: 214 or 215 or consent of instructor. Elective Pass/Fail.

375-3 Economics of Antitrust. An economic analysis of government policies intended to limit and/or control the exercise of private monopoly power. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

416-3 Money and Banking II. An examination of the principal institutions whose joint actions determine the supply of money in the United States economy. Emphasis is placed on the commercial bank operating as a firm within the Federal Reserve System. Policy issues are examined for the regulation of the banking industry as well as for the control of the domestic money supply. Prerequisite: 315 or 340 or 341 or consent of instructor. Elective Pass/Fail.

419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation and financial reform, international trade and economic integration, foreign investment, and agrarian reform. Prerequisite: 322 or 340 or 341 or consent of instructor. Elective Pass/Fail.

420-3 The History of American Growth in the 20th Century. An analytical survey of American growth in the present century. Concentrates on problems associated with the United States' role as a world economic power and changes in economic institutions engendered by rapid technological change and the need to cope with such problems as income distribution, equity, the growing public sector, inflation, unemployment, and others. Prerequisite: 340 or 341 or consent of instructor. Elective Pass/Fail.

425-4 Economics in Geography and Planning. (Same as Geography 422.) Concepts, symbols, language, theory, elementary mathematics of economics, and geography. Individual's preferences, production functions, the firm, markets optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: Geography 300 or consent of instructor. Elective Pass/Fail.

429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: 340 and 341 or consent of instructor. Elective Pass/Fail.

431-3 Public Finance II. State and local. Analysis of the economic effects, problems, and alternative solutions concerning state and local government expenditures, revenues, and debt. Prerequisite: 330 or consent of instructor. Elective Pass/Fail.

436-3 Government and Labor. (Same as Political Science 428.) Influence of government and law on collective bargaining, on the internal operation of unions, and on job discrimination in the public and private sectors. Prerequisite: GSB 211 and 212 or equivalents or consent of instructor. Elective Pass/Fail.

440-3 Price, Output, and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

441-3 Contemporary Macroeconomic Theory. An examination of the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary, and incomes policies facing the United States government. Not open to students who have had 341. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

- 442-3 Monopoly and Competition in the Industrial State.** A survey of economic theories and empirical studies on the nature and consequences of business rivalry in imperfectly competitive markets. Prerequisite: 340 or 440 or consent of instructor. Elective Pass/Fail.
- 443-3 Senior Seminar in Economics and Problems and Policy.** Application of the tools of economic analysis to the study of contemporary social problems. Economics graduate students not permitted to enroll in this course. Prerequisite: 440 and 441; or 340 and 341; senior standing. Elective Pass/Fail.
- 465-3 Mathematical Economics I.** A systematic survey of mathematical economics. Application of basic mathematical tools to economic analysis, and a restatement of economic theory in mathematical terms. Prerequisite: 340 or 440, and Mathematics 117 or 140, or consent of instructor. Elective Pass/Fail.
- 467-3 Introduction to Econometrics.** Problems in the quantification and testing of economic theories. Introduction to regression analysis. Prerequisite: 308 or consent of instructor. Elective Pass/Fail.
- 471-3 Land Resource Economics.** (See Agricultural Industries 440.) Elective Pass/Fail.
- 479-3 Problems in Business and Economics.** (Same as Administrative Sciences 479.) Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 215; 308 or Administrative Sciences 208; Marketing 304. Elective Pass/Fail.
- 481-3 Comparative Economic Systems.** Capitalism, socialism, communism, and other forms of social organization are examined from a theoretical point of view. Economic and social theories from Adam Smith and Karl Marx to Milton Friedman and Paul Sweezy will be examined. Prerequisite: 340 or 440 or consent of instructor. Elective Pass/Fail.
- 490-3 Workshop in Economic Education.** (Same as Secondary Education 490.) Designed to assist elementary and secondary school teachers in promoting economic understanding in the minds of their students through the translation of economic principles and problems into classroom teaching materials. Elective Pass/Fail.
- 500-3 to 24 (3 per topic) Economics Seminar.**
- 501-1 to 21 Economics Readings.**
- 502-1 to 4 Readings in Resource Economics.**
- 505-1 to 8 Political Economy Seminar.**
- 507-1 to 4 (1, 1, 1, 1) Practicum in Undergraduate Teaching.**
- 510-2 Research in Economics: Design, Methodology, and Presentation.**
- 512-3 Seminar in Labor Institutions.**
- 517-3 Monetary Theory and Policy.**
- 518-3 Monetary Theory and Policy II.**
- 520-6 (3, 3) Economic Development Theory and Policy.**
- 522-3 Microeconomic Foundations of Labor Markets.**
- 525-4 Economics in Geography and Planning II.**
- 526-3 Managerial Economics.**
- 530-3 Foreign Trade.**
- 531-3 International Finance.**
- 532-3 Economics of Human Resources.**
- 533-3 Public Finance Theory and Practice.**
- 538-3 Advanced Price, Output, and Allocation Theories.**
- 540-8 (4, 4) Microeconomic Theory I and II.**
- 541-6 (3, 3) Macroeconomic Theory I and II.**
- 552-3 Seminar in Economic Thought.**
- 555-3 Seminar in Economic History.**
- 562-3 Seminar in Economic Systems.**
- 566-3 Mathematical Economics II.**
- 567-6 (3, 3) Econometrics I and II.**
- 570-3 Seminar in Contemporary Microeconomic Theory.**
- 571-3 Seminar in Contemporary Macroeconomic Theory.**
- 575-3 Microeconomic Regulation.**
- 581-3 Economics of Welfare.**
- 583-3 Methodological Foundations of Economics.**
- 585-3 Seminar in Social Economy.**
- 590-1 to 8 (1 per semester) Seminar in Contemporary Economics.**
- 599-1 to 6 Thesis**
- 600-1 to 36 (1 to 16 per semester) Doctoral Dissertation.**

Education (Courses)

Courses

200-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

201-1 The Teacher's Role in Public School Education. Designed to assist the student in confirming his/her thinking concerning the desirability of pursuing a career in teaching. A requirement in the Professional Education Sequence, this course is available at the freshman level and is prerequisite to admission to the Teacher Education Program. Two-day long observation field trips to elementary and secondary schools are required during the semester in which 201 is completed. Mandatory Pass/Fail.

300-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

301-2 Human Growth, Development, and Learning. A requirement in the Professional Education Sequence. Deals with factors involved in the teaching-learning process including: cognitive development, socio-personal characteristics, socio-cultural characteristics, motivation for learning, and principles of school learning. Prerequisite: GSB 202, admission to the Teacher Education Program.

302-2 Basic Techniques and Procedures in Instruction. A requirement in the Professional Education Sequence. Techniques and procedures applicable to effective teaching including the topics: planning for instruction, strategies for instruction, assessment and evaluation, and classroom management. During the semester when enrolled in 302, each student is required to spend one-half day per week each week doing observation and participation activities in public schools or other appropriate settings. Prerequisite: admission to the Teacher Education Program.

303-2 School and Society: Historical, Sociological, and Philosophical Perspectives. A requirement in the Professional Education Sequence. Fulfills the minimum State Certification requirement in the history and/or philosophy of education. Assists students in developing and understanding of the organization, function, and role of schools in the United States. Prerequisite: admission to the Teacher Education Program.

304-2 to 12 (2, 2, 2, 2, 2, 2) Individualization in Professional Education. A series of courses dealing with various aspects of professional education. One course must be selected as part of the Professional Education Sequence requirement. (a) Audiovisual Methods in Education. Selection and utilization of audiovisual materials in the learning environment, elementary through secondary level. Audiovisual machine laboratory is required. (b) Career Education. Principles and practices of career education K-adult. Classroom, study, and field experiences. Understanding administration and curricular organizations at various levels and in various agencies. Field trip fee \$10.00. (c) Evaluation in the Classroom. Construction and use of evaluation instruments intended to assess learning especially in the public school settings. (d) Teaching in the Middle and Junior High School. The role of the middle and junior high school in the present school structure. A focus on the curriculum, learning, and instruction patterns unique to this area. (e) Teaching the Special Needs Learner. Emphasizes an understanding of special needs learners (e.g., educationally disadvantaged youth) and the development of strategies which are effective in teaching them. (f) Teaching and Affective Education. The affective domain of educational objectives. Emphasis given to a theory of values and strategies for the clarification of values; the process of valuing as an operation of teaching. Prerequisite: admission to the Teacher Education Program.

312-1 to 8 Analysis or Interaction in School or Related Educational Settings. Allows the pre-service teacher education student to observe and participate in activities and experiences relating to the offerings of their major department. These experiences will be correlated with the offerings of the student's major department, and the experiences will be designed to meet the needs of the individual student. Enrollment in this course will be coordinated by the student's major department. Placement in public school settings will be coordinated by the Department of Professional Education Experiences. Prerequisite: 301, 302, 303, or concurrent enrollment.

350-3 Seminars in Professional Education. A requirement in the Professional Education Sequence. Concentrates on situations, events, and issues that frequently arise in public school work. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 400 and 401.

400-4 Student Teaching. A requirement in the undergraduate Professional Education Sequence, 400 represents preliminary student teaching experiences necessary for

certification entitlement. Enrollment in this course must be arranged through the Office of Professional Education Experiences. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 350 and 401.

401-8 Student Teaching. A requirement in the undergraduate Professional Education Sequence, 401 concludes the student teaching experience necessary for certification entitlement. Enrollment in this course must be arranged through the Office of Professional Education Experiences. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 350 and 400.

450-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

550-1 to 10 Experimental Education.

590-4 Doctoral Seminar in Cultural Foundations of Education.

591-4 Doctoral Seminar in Behavioral Foundations of Education.

Educational Administration and Foundations

(Department, Major [Graduate only], Courses)

The Department of Educational Administration and Foundations does not offer an undergraduate major but offers courses for undergraduate credit over a broad range of subject matter in cultural and legal foundations of education.

Courses

354-3 Philosophy of Education. (Same as Philosophy 355.)

Intended primarily for those interested in education as a profession. Schools of philosophy are reviewed as they relate to education, and students are encouraged to develop and apply philosophic thought to the practices and problems of education.

360-3 Subcultures in American Education. Poverty, racial prejudice, and various subcultural issues as may relate to American educational development. Analysis of conflicting systems of cultural values and norms and their implications.

421-2 to 3 Law and the Teacher. Legislative and case law as it applies to the role of the teacher.

430-3 History of Education in the United States. An historical study of the problems of American education.

432-3 Education and Social Forces. A study of the social forces that shape educational policies in the United States.

454-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

500-3 Educational Research Methods.

501-4 Educational Administration: Processes.

503-4 Educational Administration: Introduction to Theory.

507-3 Secondary School Principalship.

509-4 School-Community Relations and Development.

510-3 Cultural Foundations of Adult Education.

511-3 Curriculum Organization.

513-3 Supervision of Instruction.

515-1 to 12 Current Issues in Educational Administration.

517-3 Legal Basis of American Education.

519-3 Illinois School Law.

521-3 School Facilities.

523-3 Systems Analysis: An Application to Education.

525-4 School Finance Theory.

527-4 School Business Administration.

529-3 Supervision of Personnel: Problems.

531-3 School Boards and Policies.

533-3 Elementary School Principalship.

551-4 Educational Leadership: Politics of Education.

552-3 Seminar in Comparative Education.

553-4 Educational Leadership: Systems and Accountability.

554-3 Seminar in Philosophy of Education.

- 555-3 Advanced Educational Administration Theory.
- 556-3 Seminar in History of European Education.
- 558-3 to 6 (3, 3) Advanced Seminar in Comparative Education.
- 559-3 Interdisciplinary Seminar in Educational Administration: I.
- 560-9 (3, 3, 3) The Twentieth Century and Education.
- 561-3 Interdisciplinary Seminar in Educational Administration: II.
- 575-1 to 3 per topic. Individual Research.
- 576-1 to 6 Readings in Administration and Foundations.
- 588-3 to 9 General Graduate Seminar.
- 595-1 to 8 Internships in Educational Administration.
- 596-1 to 6 Independent Investigation.
- 597-1 to 8 Externship.
- 599-1 to 6 Thesis.
- 600-1 to 36 (1 to 16 per semester) Dissertation.

Electrical Sciences and Systems Engineering

(Department, Major [Engineering], Courses)

(SEE ENGINEERING)

Electronic Data Processing (Program, Major, Courses)

The growth of electronic data processing in both the expansion of installations and in the complexity of hardware and software has increased the need for competent computer programmers and systems analysts. The need for persons trained only on unit record equipment, however, is decreasing.

The curriculum in electronic data processing at the School of Technical Careers prepares students for employment as business computer programmers and system analysts. Skills which the graduate obtains include competency in programming languages (such as COBOL, Assembler, and RPG) and associated areas such as accounting and systems design and development.

An outstanding feature of the program at the School of Technical Careers is the availability of an IBM 360/40 computer which is dedicated to "hands-on" student use. Other equipment available for student use includes an IBM 1401 computer and a variety of unit record machines.

The student should plan to spend small amounts for special laboratory materials.

An advisory committee made up of professional people and educators helps to keep the program responsive to needs in the field. Current members are: J. Henry Malkus, administrator of management information systems, Office of the Secretary of State, Springfield; Thomas Purcell, Information Processing Center, Southern Illinois University at Carbondale; John Guerrieri, Jr., director of research and personal services, Data Processing Management Association, Park Ridge; and Ellis T. Bick, general mechanization supervisor, Southwestern Bell Telephone Co., St. Louis, Missouri.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Electronic Data Processing

GSB 212	4
GSD 101, 153	5

Secretarial and Office Specialties 105a,b	6
School of Technical Careers 102, 104	4
Electronic Data Processing 101a,b, 104, 201a,b, 203, 204a,b, 205, 206, 207, 235	50
Electives	6
<hr/>	
Total	75

Courses

101-8 (4, 4) Automatic Data Processing Machines. The successful student will be able to: from (a) demonstrate in the laboratory and on examinations, the proper operation of basic unit record machines; to read computer number systems including BCD, octal and hexadecimal; to describe the basic components and devices of computer systems. From (b) flowchart logical solutions and write programs for simple data processing problems, and to describe the general use of several different programming languages including COBOL, Assembler, PL/1, FORTRAN and RPG. Lecture four hours. Laboratory six hours.

104-3 Data Processing Applications. The successful student will demonstrate by examination a general knowledge of processing procedures and terminology for basic business applications such as billing, accounts receivable, accounts payable, inventory control and payroll. Lecture three hours. Prerequisite: 101.

107-3 Automatic Data Processing Concepts. Designed as a concepts course for non-data processing majors. Each student will learn the basic operation and functions of data processing equipment, be able to flow chart logical solutions, write a program for a simple data processing problem, describe the use of several different programming languages, and discuss the impact of computers on our socio-economic system. Averages two lecture and three laboratory hours per week. Elective Pass/Fail.

109-2 Punched Card Preparation. Designed as a skill course for non-data processing majors. Each student will learn the basic operation and function of IBM unit record machines, memorize the keyboard and design program cards for the IBM 26 and 29 model key punches. Most of the laboratory time will be spent in improving speed and accuracy of alphameric punching. Averages one lecture and three laboratory hours per week. Prerequisite: typing skills.

201-8 (4, 4) Assembler Language Programming. The successful student will demonstrate a working knowledge of Assembler Language by flow charting, coding, compiling and testing (a) simple problems using card/printer input-output and decimal arithmetic, and (b) complex problems using disk/tape input-output, fixed point arithmetic and indexing. Averages four lecture and six laboratory hours per week. Prerequisite: 101.

202-3 FORTRAN IV Programming. The successful student will demonstrate a working knowledge of the FORTRAN IV programming language by flow charting, coding, compiling and testing a variety of mathematical and statistical problems. Lecture two hours. Laboratory three hours. Prerequisite: Mathematics 111 or consent of instructor.

203-5 Job Control Language and Utilities. The successful student will utilize the computer to demonstrate skills using JCL for applications such as utilities, sorts, merges and multi-programming operations. Lecture three hours. Laboratory three hours. Prerequisite: 201 or 204.

204-8 (4, 4) COBOL Programming. The successful student will demonstrate a working knowledge of programming language by flow charting, coding, compiling and testing (a) simple problems using sequential card, disk, and tape files with fixed length records, and (b) complex problems using ISAM and direct organization files, variable length records and subprograms. Averages four lecture and six laboratory hours per week. Prerequisite: 101.

205-3 Systems Design and Development. The successful student will demonstrate in class discussion, on examinations and by preparing a case study, his ability to design an effective business information processing system including the system flow chart, system specifications, feasibility, the implementation procedure and essential documentation. Lecture three hours. Prerequisite: 104.

206-7 RPG Programming. The successful student will be able to prepare a variety of reports from several established data files using the REPORT PROGRAM GENERATOR of the IBM 360/40 DOS System. Some reports will involve calculations and use data from both tape and disk files. Averages three lecture and six laboratory hours per week. Prerequisite: 101.

207-6 Data Processing Field Project. Designed to provide the student with a data

processing problem beyond the classroom. Each student selects and completes a suitable project in the area of systems design or programming. His work is evaluated by the manager of the cooperating center and his STC instructor. Prerequisite: 201 or 204.

208-8 (4, 4) Numerical Control Programming. The student will be able to (a) operate basic data processing machines; plan, code test and debug an elementary FORTRAN IV program; plan, code, test and prove an elementary AD-APT part program, and (b) describe the environment in which the AD-APT system resides and become proficient in using the AD-APT part part programming language. Lecture two hours. Laboratory three hours. Prerequisite: Tool and Manufacturing Technology 210.

217-3 Computing for Business Administration. Designed for business oriented students who need to know how computer systems may be used as management tools. Topics include: types of hardware and software, information systems design and management, and an introduction to FORTRAN programming. A successful student will be able to write a program in FORTRAN to analyze management information. Averages two lectures and three laboratory hours per week.

235-2 Business Statistics. The student will present data in tabular form and draw graphic representations of data; compute measures of central tendency, and solve problems dealing with measures of dispersion and skewness; do basic probability computation; deal with sampling distributions; and he will solve problems dealing with regression and correlation analysis. Lecture two hours. Prerequisite: Secretarial and Office Specialties 105a or consent of instructor.

Electronics Technology (Program, Major, Courses)

The goal of the electronics technology program is to educate an electronics technician capable of taking his place in industry in both indirect and direct support to the electronics engineer. Experiences in meter measurements and troubleshooting are provided with manuals and specifications to allow the indirect supporting technician to work for a senior technician. More than an hour each day is spent descriptively and mathematically presenting the general theory principles of electronics. This theory is then applied in a two-hour laboratory each day to design, breadboard, and evaluate circuitry to not only reinforce the theory knowledge but to prepare the direct supporting technician for his work later directly for an engineer. During the early stages of the program, most instruction is directed toward basic principles of electricity and electronics. This is followed by communication systems, digital circuits, instrumentation, and control systems.

The person who makes the best electronics technician is one who is interested in physics and mathematics, who has a desire to learn how complex equipment functions and is careful of small details, and who enjoys using his own head to seek out and solve problems.

The student should expect to spend approximately \$70.00 for instruments and supplies.

An advisory committee drawn from among professionals active in the industry helps to assure that the student gets a course of study that will prepare him for existing and developing conditions in his field. Current members are: Al Budlong, supervisor of power and bus design, Bell Telephone Laboratories, Naperville; Carl Remy, senior engineer, Electric Energy Inc., Joppa; H. N. Schlechte, branch manager, field engineering division, IBM Corp., Springfield; Robert Sell, vice president for engineering, National Transformer Co., Johnston City; and Eshmal Porter, senior engineer, McDonnell-Douglas Corp., St. Louis, Missouri.

Opportunities exist throughout industry for technicians, and students are limited only by their own talent and motivation. Job pay is directly commensurate with the technician's ability, resourcefulness, and drive.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Electronics Technology

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b, 118, and 101 or 153a	14
Electronics Technology 101, 102, 111, 112, 121, 122, 201, 202, 211, 212, 221, and 223 or 224	57
<hr/>	
Total	74

Courses

101-5 DC-AC Circuit Analysis. The laws and theory principles of DC-AC passive circuits are presented in a descriptive and mathematical analytical manner. Lecture five hours. Prerequisite: concurrent enrollment in School of Technical Careers 105a,b.

102-5 Electronics Circuit Theory. The operation of active devices with their passive components are descriptively and mathematically presented in circuits and systems such as amplifiers, oscillators, power supplies, transmitters and receivers. Lecture five hours. Prerequisite: 101.

111-6 DC-AC Circuit Analysis Laboratory. Application of the theory studies in 101 on passive circuits is made under experimental conditions. Laboratory ten hours. Prerequisite: concurrent enrollment in 101.

112-6 Electronics Circuits Laboratory. Application of the theory studies in 102 on electronic circuits is made under experimental conditions. Laboratory ten hours. Prerequisite: 111, and concurrent enrollment in 102.

121-4 Electronic Devices. The focus is placed on the active electronic device, its construction, operational characteristics, and application in a single functional block. In this lecture-laboratory the student observes materials of construction, experiments with typical characteristics and compares them with manufacturer specifications. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 101.

122-3 Propagation and Coupling. Propagation theory, transmission of energy, coupling systems, and antenna theory. Lecture three hours. Prerequisite: 101.

201-5 Telemetry and Industrial Circuits Theory. The theory principles are covered on circuitry employed in the measurement, transmission, resolution, and development of data required for operation in industrial and commercial applications. Lecture five hours. Prerequisite: 102.

202-5 Digital Circuits Theory. The student gains an understanding of the circuits used to make up such systems as numeric controls, computers, and communications networks. Lecture five hours. Prerequisite: 102.

211-6 Telemetry and Industrial Circuits Laboratory. Application of the theory studied in 201. It develops skills in design, testing, and troubleshooting pulse circuits, microwave equipment, and industrial circuits. Laboratory ten hours. Prerequisite: 102.

212-6 Digital Circuits Laboratory. The laboratory provides organized investigation of individual circuits and subsystems that are employed in a variety of major systems in industry and commerce. Laboratory ten hours. Prerequisite: 102.

221-3 Electronic Systems Analysis. Electronic systems analysis of FM and TV are covered as complete systems. Emphasis is placed on modulation, demodulation, and synchronization. Lecture three hours. Prerequisite: 102.

223-3 Federal Communications Commission Test Preparation. Programmed instruction designed to prepare a student for the test for the second class FCC radio-telephone license. Individualized instruction three hours. Prerequisite: 102.

224-3 Computer Systems Application. Analysis of the computer's operational blocks, machine language programming, and troubleshooting are done on the Digiac 3060 computer. Lecture three hours. Prerequisite: 201 and concurrent enrollment in 202.

250-2 Controls, Motors, and Generators. Upon completion of this course the student will be able to choose the proper contactors and fuses for a given job. He will be able to read meters and apply Ohm's law to the DC motor-generator, series, parallel and combination circuits with the proper wire sizes. This course is designed for non-majors and is learner paced. Elective Pass/Fail.

251-2 Electronic Measuring Instruments. Upon completion of this course, the student will be able to measure amps, volts, and ohms on the AC-DC equipment. He will be able to design and build simple meter circuits from meter movements and color coded resistors. He will be able to operate the oscilloscope to solve AC Ohms Law problems. This course is designed for non-majors and is learner paced. Prerequisite: 250. Elective Pass/Fail.

252-2 Amplifiers, Power Supplies, and Transducers. Upon completion of this course, the student will be able to measure an amplifier's gain, frequency response, input and output impedance. He will be able to measure a power supply's efficiency, ripple and regulation and properly apply a new power supply to a given load. He will be able to analyze an amplifier to properly apply input transducers (microphones, phonopickups, etc.) and output transducers (speakers, meters, etc.) This course is designed for non-majors and is learner paced. Prerequisite: 251. Elective Pass/Fail.

301-5 Introduction to Electronic Biomedical Instrumentation. Designed to develop an understanding of the fundamentals of electronic circuits employed in biomedical instrumentation for the following purposes: cardiovascular measurements, patient care and monitoring, measurements in the respiratory system, measurement of physical variables, sensory measurements for the study of behavior, biotelemetry, instrumentation for the clinical laboratory, X-ray and radioisotope instrumentation, and particularly electrical safety for medical equipment. Lecture, five hours.

311-6 Electronic Biomedical Instrumentation Laboratory. The laboratory is designed to provide hands-on experience with the equipment currently available for use in biomedical instrumentation. The equipment is selected from the major supplies and will be utilized to teach inter-facing and applications. The equipment will encompass sensors, transducers, amplifiers, oscillators, display and recording devices. Complete systems approach will be taught in conjunction with the medical school laboratories on existing equipment. Laboratory, ten hours.

Elementary Education (Department, Major, Courses)

In addition to entering programs in the Department of Elementary Education directly from within the College of Education, one may enter (1) from the General Studies program (provided the individual has attained 30 semester hours), (2) from other academic units, or (3) from other institutions of higher education. Each student who wishes to apply for the State of Illinois Standard Elementary Certificate (for teaching in grades K-9) or for the State of Illinois Early Childhood Certificate (for teaching ages 0-6) through the entitlement process must fulfill the following requirements of the teacher education program at Southern Illinois University at Carbondale.

1. The individual must have completed a baccalaureate program at Southern Illinois University at Carbondale.
2. The individual must meet requirements for certification related to the state and federal constitutions by one of the following:
 - a. taking GSB 212 or 300;
 - b. taking a course in American history or political science other than those listed in "a", above, *and* pass the Constitution test administered by the Southern Illinois University at Carbondale Student Affairs Research and Evaluation Center;
 - c. presenting written notification from another institution that a course in American history or government has been passed *and* that the tests have been passed on the Constitutions of Illinois and the United States.
3. The individual must meet the requirements in health and physical education which can be satisfied by taking GSE 201-2 and two hours in GSE 100-114 courses.
4. The individual must complete all requirements for majors listed in the following information.

Elementary Education Major

One who is preparing to teach in elementary school should select a major in elementary education or early childhood education. The Department of Elementary Education is concerned with providing the sequences of professional education courses that lead to certification for teaching in the public

elementary schools of Illinois. Further, it is concerned with programs composed of general and professional course requirements which lead to the Bachelor of Science degree with a major in elementary education or early childhood education. Students interested in teaching children 0-6 years of age in other than public schools settings should elect to participate in the early childhood-preschool program.

Bachelor of Science Degree, College of Education

General Studies Requirements + Additional General Education

Requirements for Major 67

Physical and Biological Sciences (GSA) 11

Social Sciences (to include GSB 202 and GSB 300 or 301) 11

Fine Arts (to include GSC 100, 101, or 205; must include one music and one art course, which may be taken as part of GSC) 9

Language Arts (to include GSD 101, GSD 117 or 119, GSD speech, and GSC literature) 16

Mathematics (to include GSD 107 or equivalent and mathematics 308) 7

Health and Physical Education (GSE) 5

Electives (may be taken from electives cited under specialization requirements) 8

Professional Education Requirements 24

See Teacher Education Program, page 68.

Specialization Requirements for Major 26

Elementary Education 310, 337, 413¹, 423, 424, and 441 18

Electives 8²

In one of the following areas:

a. Science (Elementary Education 442¹ or Botany 462 recommended)

b. Language Arts (English 290, Speech 430 recommended)

c. Social Studies (Political Science 332, Sociology 302, Geography 300 recommended)

d. Mathematics (Mathematics 309 recommended)

Electives (eight must be in Elementary Education) 11

Total 128

¹Applies as a general education certification requirement for major.
²Elective hours from general education may apply; combined total must equal 16 hours.

Early Childhood Education Major

EARLY CHILDHOOD EDUCATION—KINDERGARTEN THROUGH GRADE 3 SPECIALIZATION

General Studies Requirements + Additional General Education

Requirements for Major 75

Physical and Biological Sciences (GSA) 11

Social Sciences (to include GSB 202 and GSB 300 or 301, other GSB courses) 11

Fine Arts (to include GSC 100, 101 or 205. Must include Music 101 or two levels of Music 030, Music 300 and Art 348. May be taken as part of GSC) 14

Language Arts (to include GSD 101, GSD 117 or 119, GSD speech and GSC literature)	16
Mathematics (to include GSD 107 or equivalent and Mathematics 308)	7
Health and Physical Education (must include Physical Education for Women 319, other GSE courses)	7
Electives (Elementary Education 442 ¹ recommended)	9
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Specialization Requirements for Major</i>	24
Elementary Education 203, 309, 310, 316, 337, 413 ¹ , 423, 441,	
Occupational Education 302	

¹Applies as general education certification requirement for major.

<i>Electives</i>	5
Must be taken in Elementary Education; recommended are	
Elementary Education 409, 445, and 431.	

<i>Total</i>	128
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EARLY CHILDHOOD EDUCATION—PRE-SCHOOL SPECIALIZATION

The early childhood education-pre-school specialization is jointly offered with the Department of Child and Family in the College of Human Resources. The program has been specifically designed to prepare future teachers of children under six and will lead to certification at the state level.

<i>General Studies Requirements (Include GSB 202, 212, GSE 201)</i>	45
Child and Family 227, 237, 240, 245, 337, 345, 466, 471-6	26
Elementary Education 203, 218, 317, 318, 413, 418, 445	21
Food and Nutrition 100	3
Music 303	2
Psychology 301	3

<i>Electives</i>	20
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<i>Total</i>	120
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Courses

203-2 Understanding the Elementary School Child. Child development concepts necessary for understanding the elementary school child; with information provided on preschool, primary, and intermediate grade levels. Observation experiences for student to see the conceptual aspect in a practical setting are provided for students.

218-2 Philosophy of Creativity. The creative process in the developing child. Emphasis will be upon the levels, dimensions, and individuality of creativity as it is observed, nurtured and manifested in pre-school children.

258-1 to 4 Credit for Work Experience. This course includes work experience relevant to elementary and early childhood education, such as work in day care centers, teacher's aid in a public school, or with federal, state, or local agencies or programs that deal with children. Prerequisite: consent of undergraduate affairs committee, Department of Elementary Education.

309-2 Early Childhood Social Learning Methods. The objectives, procedures, and methods of designing and implementing social learning environments for early childhood education programs; including an overview of significant early social learning theory and practice. Two hour block required for practicum experiences.

310-3 Teaching Mathematics in the Elementary School. Objectives of mathematics education, learning theory as it is related to mathematics, major concepts to be taught,

modern approaches to instruction, with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per week.

316-2 Early Childhood Education Methods and Curriculum (K-3). Philosophy and principles underlying the teaching of four-to-eight-year-olds. Emphasis upon organization, equipment, materials and methods for promoting growth of young children. Prerequisite: concurrent enrollment in Education 302.

317-4 Early Childhood (Preschool) Curriculum I. Understanding the role of the teacher in integrating the principles underlying the child-development with the natural interests and activities of the child 3-5 through the use of equipment, materials and educational methods. Emphasis will be on language and affective development. Practical experiences in a preschool setting—one-half day per week. Prerequisite: 218 and Child & Family 240.

318-5 Early Childhood (Preschool) Curriculum II. Diagnosing factors in the preschool learning situation, prescribing learning experiences, assessing effectiveness of learning, and developing inquiry. Emphasis on cognitive and psychomotor development. Practical experiences in a preschool setting — one day or two and one half days per week. Prerequisite: 317.

337-3 Teaching Reading in the Elementary School. The principles of reading, factors that condition reading, materials and methods related to the teaching of reading with grade placement of aims and materials; diagnostic and remedial treatment.

390-1 to 3 Readings in Elementary Education. In-depth reading in various areas of elementary education as related to the fields of (a) Curriculum, (b) Supervision, (c) Language Arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social Studies, (h) Problems in Elementary Education, (i) Early Childhood Education, (j) Elementary Education, (k) Administration and Supervision, (l) Disadvantaged Child.

401-2 to 3 Problems in Public School Reading. Requires attendance at all sessions of a reading conference; preparation of a paper showing practical applications of theory to the student's own teaching situation.

409-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education (Preschool—Grade 3). Examines recent findings, current practices, and materials used in early childhood education in the fields of (f) Reading, (c) Language Arts, (e) Mathematics, (g) Social Studies, and (d) Science. Prerequisite: specialized methods course for the field of study selected by the student.

410-3 Improvement of Instruction in Middle Grades (Grades 4-8). Examines recent findings, current practices, and materials in middle education settings in the field of mathematics. Prerequisite: specialized methods course for the field of study.

411-3 Seminar in Instruction. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the elementary school classroom, with special attention to the characteristics and needs of students. Prerequisite: Education 302.

413-3 Children's Literature in Early Childhood and Elementary Education. Emphasizes types of literature, analysis of literary qualities, selection and presentation of literature for children, and integration of literature in the pre-school and elementary education.

418-2 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with its implication for current program practices. Student analysis of personal philosophy of early childhood education. Prerequisite: 316, 318, senior or graduate standing.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling, and listening. Study of learning materials, specialized equipment and resources.

424-3 Teaching Elementary School Social Studies. Emphasis on the structure and process of teaching social studies in the elementary school setting. Specific attention to the fundamentals of developing social studies objectives, planning units, developing a general teaching model, organizing the curriculum, and evaluating behavioral change. Study of learning materials, specialized equipment, and resources.

430-2 Creative Writing in the Elementary School. Techniques of encouraging creative writing in the elementary school. Prerequisite: consent of instructor.

431-3 Education for Disadvantaged and Culturally Different Children in Early Childhood and Elementary School Settings. Examines the characteristics of behavior and learning patterns of culturally different and socio-economically disadvantaged children. Also discusses necessary school adjustment experiential background, self concept, language development, learning style, and appropriate teacher behaviors for relating to disadvantaged and culturally different children.

437-3 to 9 (3 per topic) Corrective Techniques for the Classroom Teacher. Discussion of diagnostic and remediation techniques for use in classroom in the areas of

(f) Reading, (e) Mathematics, (c) Language Arts. Prerequisite: specialized methods course in field selected by student and/or consent of instructor.

441-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips.

442-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Botany 462.) Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs; e.g., SAPA, ESS, SCIS. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required. Prerequisite: teacher education or consent of instructor.

445-3 Parent Involvement in Education. Materials, techniques, and resources suitable for use by teachers in helping parents and teachers to understand how they can help each other in the partnership responsibilities of the education of children from a variety of backgrounds. Prerequisite: student teaching or consent of instructor.

475-2 to 33 (2 to 3 per topic) Workshop in Elementary Education. Critical evaluation of innovative programs and practices. Acquaints teaching within a single school system, or a closely associated cluster of school systems, with the philosophical and psychological considerations and methods of implementation of new programs and practices in one of the following areas: (a) Curriculum, (b) Supervision, (c) Language Arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social Studies, (h) Problems in Elementary Education, (i) Early Childhood Education, (k) Administration and Supervision, (l) Disadvantaged Child. Maximum of six hours counted toward a master's degree. Prerequisite: 314.

503-3 Seminar in Psychology of Elementary School Subjects.

505-3 Reading in the Elementary School.

507-1 to 28 (1 to 2 per topic) Independent Readings.

509- (3 to 9 per topic) Practicum.

514-3 Organization and Administration of Reading Programs.

517-3 Early Childhood Programs: Organization and Administration.

518-3 Supervision of Professional Education Experiences.

520-3 Diagnosis and Correction of Elementary Mathematics Disabilities.

521-8 (4, 4) Diagnosis and Correction of Reading Disabilities.

525-3 to 33 (3 per topic) Specialty Area Seminar.

531-3 Disadvantaged Schools: Research and Teaching.

533-3 The Elementary Principalship.

537-3 Kindergarten-Primary Reading.

541-3 Problems in Elementary School Science Education.

542-3 Language Arts in the Elementary School.

543-3 Teaching the Social Studies in the Elementary School.

558-3 Leadership in Elementary Education.

560-3 Early Childhood Education.

561-3 The Elementary School Curriculum.

563-3 Organization of the Elementary School.

564- (2 to 8 per topic) Internship.

570-3 Seminar, Research in Elementary Education.

575-1 to 30 (1 to 3 per topic) Individual Research.

596-3 to 6 Independent Investigation.

599-2 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Engineering (Major, Courses)

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of mankind.

The four-year undergraduate program leading to the Bachelor of Science degree in engineering is a modern, flexible curriculum fully accredited by the Engineer's Council for Professional Development (ECPD), the recognized agency for accrediting engineering curricula in the United States. Graduating seniors with a major in engineering are eligible to take the Engineer-In-

Training (EIT) examination as a first step toward registration as a Professional Engineer (PE).

The program of study consists of a common core and an elective option. The common core consists of courses in basic sciences, mathematics, engineering science, and engineering design. Sometime before the senior year, the student selects the option which contains required and elective courses in an area of interest. Fully accredited by ECPD, the options are:

Electrical Sciences and Systems Engineering

Engineering Mechanics and Materials

Thermal and Environmental Engineering

Judicious selection of elective courses allows the student to prepare for a variety of areas (see individual curricula) identified with the traditional engineering disciplines (electrical, mechanical, civil, etc.) and other areas that transcend the traditional disciplines. The aim of this flexibility is to provide society with graduates who can cope with a variety of engineering activities such as design, development, testing, consulting, and applied research. These activities may be directed toward the solution of contemporary problems varying from design of devices to problems of an interdisciplinary or complex-systems nature.

Students enrolled in community colleges who plan to transfer to Southern Illinois University at Carbondale should take courses that provide backgrounds in mathematics, physical sciences, social sciences, and humanities. They may transfer at any time, but there are advantages in having completed a baccalaureate-oriented associate-degree program. Community college students can complete specific Southern Illinois University at Carbondale course requirements which include 5 hours of English composition and speech, 8 hours of university physics, 7 hours of chemistry, 11 to 14 hours of mathematics (including calculus), 5 hours of statics and dynamics, and 15 hours of social sciences and humanities. Calculus and analytical mechanics are prerequisites for most junior-level engineering courses.

Students with bachelor of science degrees in engineering can specialize further at the graduate level.

Courses

Safety glasses, a slide rule with log-log scales (or the equivalent) and textbooks are required for all engineering students.

100-3 Introduction to Engineering. Introduction to the exciting and challenging experience of engineering. Methods and procedures utilized by the engineer for problem solving are discussed. Each student will be involved in an authentic engineering design project. A graphics and computational tools laboratory will be part of the course.

200-2 Conservation of Mass and Energy. Introduction to engineered systems. Units, dimensional analysis and process specifications. First law of thermodynamics. Mass and energy balances applied to chemical and thermal systems. Prerequisite: Mathematics 150 and Chemistry 224.

222-2 Computational Methods for Engineers and Technologists. Introduces the student to the use of digital computers and programmable calculators in the solution of technical problems. A problem-oriented computer language is used to solve relevant problems that are specifically designed for the engineering and technology student. Problem analysis, flow charting, coding, diagnostics, execution, and solution verification are discussed. Prerequisite: Mathematics 111. Elective Pass/Fail.

260-5 (2, 3) Mechanics of Rigid Bodies. (a) Principles of statics; force systems; equilibrium of particles and rigid bodies; trusses, frames and machines, centroids; friction; moments of inertia of areas. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Principles of dynamics; mass moment of inertia; kinematics and kinetics of particles and rigid bodies; vibrations. Prerequisite: 260a or equivalent.

300-3 Engineering Thermodynamics. Study of the basic laws of thermodynamics and introduction to engineering applications. Thermodynamic properties for ideal and real substances. Use of properties in analysis of processes and cycles. Utilization of equilibrium criteria. Prerequisite: 200.

- 302-3 Engineering Heat Transfer.** An introductory study of the rate mechanisms of thermal energy transport both in steady state and in transient conditions, with and without phase change. Prerequisite: 200, 222; Mathematics 305 or concurrent enrollment.
- 311-3 Mechanics of Deformable Bodies.** Introduction to the mechanics of deformable bodies. Forces and deformations. Torsion. Stresses in beams. Deflections of beams. Statistically indeterminate beams. Columns. Laboratory. Prerequisite: 260a.
- 312-3 Materials Science Fundamentals.** Sub-microscopic structure of solids, including electronic states, atomic and molecular arrangement, structural imperfections and atomic diffusion, and their relationship to macroscopic properties; physical properties of semi-conductors, dielectric and magnetic properties of materials; metallic, organic, and ceramic materials and their mechanical properties; composite materials. Prerequisite: Physics 205 and Mathematics 250.
- 313-3 Fluid Mechanics.** A broad introduction to the concepts and principles of fluid statics, kinematics, and dynamics. The fundamental laws for fluid motion in the form of Euler's, Bernoulli's, impulse-momentum and work-energy equations. Dimensional analysis and dynamic similitude. Resistance to flow: deformation drag, surface drag, form drag. Introduction to compressible fluid flow. Laboratory. Prerequisite: 260b or concurrent enrollment.
- 335-3 Electric Circuits.** Foundation course in electric circuits. Basic laws and concepts of linear circuits. Analysis of AC and DC circuits by mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation. Transients. Prerequisite: Mathematics 250. Elective Pass/Fail.
- 345-3 Electronics.** Functional electronics and signal theory. Characteristics of electronic modules and their application to wide range of signal processing problems. Signal characteristics. Two-port "black box" parameterization. Operational amplifiers. Product modules. Modulation and demodulation. Digital modules. Prerequisite: 335. Elective Pass/Fail.
- 361-2 Engineering Economics.** Procedures for evaluating the relative economic merit of applied engineering principles. These procedures, which are included in all professional engineering examinations, involve comparison of alternate engineering estimates. Prerequisite: Mathematics 111 or equivalent.
- 385-3 Electromechanical Energy Conversion.** Principles of electromechanical energy-conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Singlephase and polyphase machines. Polyphase circuits. Prerequisite: 335. Elective Pass/Fail.
- 443-4 (2, 2) Engineering Design.** Projects of an engineering systems design nature. Students select a problem, define and design the various subsystems, define subsystem interface requirements, integrate the subsystems into the final design and document the design effort. Laboratory. Must be taken in a, b sequence. Prerequisite: senior standing in engineering.
- 455-3 Engineering Geology.** (See Geology 455.)

ELECTRICAL SCIENCES AND SYSTEMS ENGINEERING

(Department, Major [Engineering], Courses)

Students who choose the electrical sciences and systems engineering option prepare themselves for professional employment or graduate studies in areas associated with electrical or systems engineering. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; consumer-goods manufacturers; and telecommunications, electric-power, computer, and microelectronic companies. Flexibility in this option allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems.

Bachelor of Science Degree, School of Engineering and Technology

ENGINEERING MAJOR—ELECTRICAL SCIENCES AND SYSTEMS ENGINEERING
SPECIALIZATION

General Studies Requirements 29¹
GSA: 115 or 209 or substitute Geology 220. Substitute Physics

205a, b, 255a, b, Chemistry 224, 225 which are included under major course requirements

GSB	9
GSC	9
GSD: Substitute mathematics	7
GSE	4

Requirements for a Major in Engineering 103

Life of earth science 3

GSA 209 or 115 or Geology 220

Chemistry 224, 225 7

Physics 205a, b, 255a, b 8

Mathematics 150, 250, 251, 305 and approved

elective-3 17

Engineering (Core): 100, 200, 222, 260a, b, 300, 302, 311, 312,

313, 335, 345, 361, 385, 443a, b 42

Specialization in Electrical Sciences and

Systems Engineering 26

ESSE (Core) 455; 465; Select one of 447, 476, 477, or 486; Select

one of 427, 446, 456, 457, or 487 11-13

Approved technical electives 13-15

Total 132

¹Courses required for the major will apply toward 16 hours of General Studies making a total of 45 in that area.

Courses

Safety glasses, a slide rule with log-log scales (or the equivalent) and textbooks are required of all electrical sciences and systems engineering students.

421-2 Digital Computers in Applied Physical Research. Computational techniques for matrix inversion, solution of linear equations, and characteristic roots and vectors. Least squares analysis, curve-fitting, and regression. Numerical quadrature. Solution of nonlinear equations. Solution of regular differential equations and boundary-value problems. Generation of approximate solutions. Monte Carlo techniques. Engineering and other physical examples are used as the primary teaching vehicle. Prerequisite: Engineering 222 and Mathematics 305. Elective Pass/Fail.

426-3 Hybrid Computation. Use of analog and digital computers for solution of engineering problems. Comparison between analog and digital problem-solving techniques. Hybrid simulation of engineering systems. Prerequisite: Engineering 222 and Mathematics 305, or consent of instructor. Elective Pass/Fail.

427-3 Digital-Systems Design I. Concepts of digital systems. Relation of Boolean algebra to switching circuits. Combinational logic circuit implementation. Minimization of combinational functions by algebraic techniques, Karnaugh mapping, and tabular methods. Sequential systems. Basic design methods for synchronous systems. Prerequisite: Engineering 345 or senior standing. Elective Pass/Fail.

446-4 Electronic Circuit Design. Design techniques for a wide range of electronic circuits. Device and circuit modeling. Computer aided circuit design. Consideration of audio, video, and tuned amplifiers; feedback; oscillators; digital circuits. Design project. Lecture and laboratory. Prerequisite: 455 or concurrent enrollment. Elective Pass/Fail.

447-2 Applications of Modern Electronic Devices. Physical mechanisms governing fabrication and operation of transistor, charge-transfer, photosensitive, display, and Hall-effect devices. Techniques of fabrication of integrated circuits and hybrid microelectronics. Device design. Prerequisite: Engineering 312 and 345. Elective Pass/Fail.

455-3 Linear Systems. Fundamental techniques in analysis of linear systems. Transient analysis of linear electrical networks and analogous systems by classical, Laplace-transform, and computer techniques. Feedback, frequency response, and state variables. Prerequisite: Engineering 335 and Mathematics 305. Elective Pass/Fail.

456-3 Control Theory. Fundamentals and techniques for analysis and design of systems with feedback. Signal flow graphs. S-plane analysis. Frequency-domain analysis.

Root locus. Stability conditions. Compensation techniques. Prerequisite: 455. Elective Pass/Fail.

457-3 Systems Theory. In-depth study of system concepts such as interaction, anticipation, feedback, feedforward, stability, and memory. Methods which maintain flexibility and generality in dealing with all types of engineering systems. Prerequisite: Mathematics 305 or consent of instructor. Elective Pass/Fail.

458-3 Communications Theory. Basic information theory. Fourier series and transform. Sampling theory. Amplitude modulation, frequency modulation, and pulse modulation. Signal-to-noise ratio. Statistical methods. Prerequisite: 455. Elective Pass/Fail.

461-4 Bio-electricity and Biomedical Instrumentation. Interdisciplinary course primarily for life-science students. Electromagnetics relative to living systems. Circuit analysis. Functional electronics. Electric safety. Specific clinical and research instrumentation. Lecture and laboratory. Elective Pass/Fail.

465-3 Instrumentation. Theory and practice related to measurement systems for research and industry. Instrument characteristics. Techniques in analog and digital instrumentation. Transducers. Signal conditioners. Output and display systems. Statistics of measurement. Design project. Lecture and laboratory. Prerequisite: Engineering 345. Elective Pass/Fail.

476-3 Electromagnetic Fields I. Electric and magnetic fields using vector analysis. Evolution of Maxwell's equations through the laws of Coulomb, Gauss, Ampere, and Faraday. Concepts of energy and potential. Poisson and Laplace fields. Wave equation and plane waves. Transmission lines. Prerequisite: Mathematics 305. Elective Pass/Fail.

477-3 Electromagnetic Fields II and Microwaves. Application of Maxwell's equations and the laws of electromagnetics to boundary-value problems, microwave devices, guiding structures, and radiating structures. Poynting's theorem and energy relationships. Lecture and laboratory. Prerequisite: 476. Elective Pass/Fail.

486-3 Electric Energy Sources. Principles and utilization of nuclear, solar, and fossil-fuel generators. Direct energy converters including thermionic, thermoelectric, and photovoltaic. Prerequisite: Engineering 385 or consent of instructor. Elective Pass/Fail.

487-4 Power Systems Analysis I. Introduction to analysis of electric power systems. Modeling of power system components. Power system configuration. Control of power and frequency. Control of voltage and reactive power. Load-flow analysis. Introduction to symmetrical components. Prerequisite: Engineering 385. Elective Pass/Fail.

492-1 to 5 Special Problems in Engineering. Topics and problems selected either by student or instructor. Prerequisite: senior standing and consent of instructor. Elective Pass/Fail.

527-3 Digital Systems Design II.

536-3 Network Synthesis.

547-3 Solid-State Theory of Electronic Materials.

556-3 Modern Control Theory.

557-6 (3, 3) Complex Systems.

577-4 Electromagnetic Fields III.

580-1 to 4 Seminar.

586-3 Power Systems Analysis II.

592-1 to 5 Special Investigations in Engineering.

599-1 to 6 Thesis.

ENGINEERING MECHANICS AND MATERIALS (Department, Major [Engineering] Courses)

The engineering mechanics and materials option is designed to help students prepare for a broad professional career in areas of civil and/or mechanical engineering, to specialize in selected areas of engineering mechanics, or to prepare for graduate studies. Course work is offered by the department in experimental analysis, vibrations, machine design, materials science, hydraulics, soils and foundations, structural analysis and design, numerical methods, and supersonic flow. The student, with the help of his adviser, is encouraged to choose a sequence of technical electives to achieve a solid and coherent specialization.

Bachelor of Science Degree, School of Engineering and Technology

ENGINEERING MAJOR—ENGINEERING MECHANICS AND MATERIALS SPECIALIZATION

GSA: 115 or 209 or substitute Geology 220. Substitute Physics 205a,b, 255a,b, Chemistry 224, 225 which are included under major course requirements.	
GSB	9
GSC	9
GSD: Substitute mathematics	7
GSE:	4
<i>Requirements for Major in Engineering</i>	103
Life or earth science	3
GSA 209 or 115 or Geology 220	
Chemistry 224, 225	7
Physics 205a,b, 255a,b	8
Mathematics 150, 250, 251, 305 and approved elective-3	17
Engineering (Core) 100, 200, 222, 260a,b, 300, 302, 311, 312, 313, 335, 345, 361, 385, 443a,b	42
Specialization in Engineering Mechanics and Materials	26
EMM (Core) 413, 447, 449, 464	9
Technical electives in approved areas (at least 9 hours must be EMM credit)	17
<hr/>	
<i>Total</i>	132

¹Courses required for the major will apply toward 16 hours of General Studies making a total of 45 in that area.

Courses

Safety glasses, a slide rule with log-log scales (or the equivalent) and textbooks are required of all engineering mechanics and materials students.

375-3 Design of Machine Elements. Working stresses, shafting, springs, belts, clutches, brakes, chains, lubrication, spur gears. Prerequisite: Engineering 260b, 311 or equivalent.

402-6 (3, 3) Crystal Structure Analysis. (Same as Chemistry 472.) (a) Introductory Crystallography. Lattice theory of the crystal. Miller indices. Crystal zones. The Bravais lattices. Symmetry elements. Proper and improper rotations. Point groups: crystal classes. Operators involving translation. Space groups. Elements of crystal structure. Coordination. Structure types. X-ray diffraction techniques. X-ray diffraction by single crystals: fundamental equations. Reciprocal lattice and Ewald sphere. Optical analog: the optical diffractometer. Single crystal photographic methods: the Laue method: rotating and oscillation. Weissenberg, Buerger-procession and Jong-Bounan, divergent and convergent-beam techniques. Interpretation of the x-ray diagrams. Diffractometric methods; fundamentals. Identification of polycrystalline materials with x-ray diffractometer (power method). Single crystal diffractometry. Absolute intensity measurements. (b) Crystal Structure Analysis. Fundamental diffraction relations. Determination of the cell size, chemical formula, symmetry and space group. Measurement of intensities: geometrical and physical factors affecting intensities. The structure factor: phase of the structure factor. The anisotropic temperature factor. Fourier synthesis. Electron-density projections. The phase problem. Utilization of anomalous dispersion. Direct determination. The Patterson method. Refinement of the structure with high-speed computers. Prerequisite: consent of instructor.

409-3 Hydrology and Hydraulic Engineering Design. Study of the hydrologic cycle. Streamflow analysis. Unit hydrograph. Matrix methods; synthetic methods. Frequency analysis; multivariate distributions. Hydrologic and hydraulic routings. Groundwater hydrology. Application of hydrology to the design of various hydraulic structures: small dams, spillways, drainage systems. Prerequisite: Engineering 313 or equivalent or consent of instructor. Elective Pass/Fail.

413-3 Mechanics of Fluids—Analysis and Design. The analysis and design of the elements of fluid systems. Fluid machinery; open and closed conduit systems; flow

through porous media; principles of propulsion. Selected design topics. Prerequisite: Engineering 313 or equivalent.

414-2 Intermediate Fluid Mechanics. A coherent presentation of the specialized topics of fluid dynamics from the common analytical background of the general equations of motion. Real fluid flow theory and the Navier-Stokes equations. The Potential Flow theory and the Laplace equation. Introduction to conformal mapping. Numerical methods. The Boundary Layer theory. Dynamic similitude. Normalized equations of motion and energy. Modeling ratios. Prerequisite: Engineering 313 or equivalent.

417-3 Fundamental Compressible Fluid Flow. Equations of motion for compressible flow. Wave propagation in compressible media. Isentropic flow of a perfect gas. Normal shock waves. Oblique shock waves. Prandtl Meyer flow. Flow with friction, heat addition and heat loss. Flow with applied magnetic fields. Imperfect gas effects. Prerequisite: Engineering 313 or equivalent.

419-3 Soil Mechanics and Foundation Engineering Design. Study of soil behavior and its application in foundation engineering. Laboratory. Soil-water systems and interactive forces; stress-strain characteristics; effective stress concept; drained and undrained conditions for saturated soils; theory of consolidation. Design of retaining walls, earth dams, shallow and deep foundations. Prerequisite: Engineering 311, 313, or consent of instructor.

440-3 Structures. An introduction to structural engineering. The design procedure. Loads. Types of structures. Structural materials, safety. Social and environmental considerations. Analysis of structures. Influence lines. Deflections. Slope deflection. Moment distribution. Matrix methods. Prerequisite: Engineering 311 or consent of instructor.

441-3 Vibrations in Machines and Structures. Systems with several degrees of freedom. Equations of motion. Phasor and trigonometric solution. Applications. Prerequisite: Engineering 260B and Mathematics 305.

442-3 Structural Steel Design. An introduction to structural steel design with emphasis on buildings. Composite design. Plate girders. Rigid frames. Prerequisite: 440 or consent of instructor.

444-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Prerequisite: 440 or consent of instructor.

447-2 Intermediate Mechanics of Materials and Structures. Shear center for beams. Unsymmetrical bending. Flexure of curved members. Contact stresses. Energy methods. Inelasticity in one dimension. Buckling formulas. Prerequisite: Engineering 311.

448-3 Experimental Stress Analysis. Theoretical and experimental methods of determining stresses and strains; use of optical, electrical, and mechanical instrumentation; relation of model and prototype; brittle coating; electrical resistance gages; Moire analysis; two-dimensional photoelastic method. Prerequisite: 311.

449-2 Intermediate Dynamics. Kinematics and kinetics of plane and three-dimensional motion. The principles of work and energy applied to the motion of rigid bodies. The principle of impulse-momentum applied to variable mass and rigid body systems including gyroscopic motion. Vibrational analysis of single degree of freedom systems. Prerequisite: Engineering 260B.

451-3 Numerical Methods in Mechanics. An introduction to the available numerical methods and techniques which are employed to solve engineering problems with special emphasis devoted to areas of mechanics involving stress analysis, vibrations, fluid flows, mechanisms, and structures. Prerequisite: Engineering 222, 311, 313 or consent of instructor.

458-2 Photoelasticity. Optics related to photoelasticity; theory of photoelasticity; photoelastic model materials; analysis techniques; three-dimensional photoelasticity; birefringent coatings; holography in photoelasticity; application of photoelastic methods in industrial problems. Prerequisite: Engineering 311.

462-3 Matrix Methods of Structural Analysis. Displacement and force methods of analyzing trusses, continuous beams and rigid frames. Composite structures. Plane grids. Direct element method. Computer library programs will be used. Prerequisite: 440, Engineering 222 or consent of instructor.

464-2 Intermediate Materials Science. Internal structure, treatment, and properties of metals and intermetallic compounds. Theory of dislocations in metals. Plastic flow, phase transformations, martensitic transformation, and x-ray diffraction identification of metallic phases. Prerequisite: Engineering 312.

465-3 Preparation of Crystalline Materials. Crystalline materials preparation. Phase rule. Crystal growth. Homogeneous and heterogeneous nucleation. Absorption. Impurities, rate of crystallization. Preparative crystallization. Twinning. Spiral growth theory. Recrystallization. Perfection of crystalline materials. The solid as an imperfect

body. Isomorphic substitution. Composition disorder. Electron holes and traps. Diffusion. The role of imperfections. Prerequisite: 464.

470-3 Engineering Analysis. Methods of solution for basic ordinary differential equations with applications to engineering systems. Basic methods of solution for partial differential equations with emphasis on applications of the Laplace, Poisson, and heat equations to engineering problems. Basic vector field theory; transformation theorems. Simulation techniques applied to engineering systems. Prerequisite: Mathematics 305 or equivalent.

492-1 to 5 Special Problems in Engineering. Selected engineering topics and/or problems. Prerequisite: consent of instructor.

504-6 (3, 3) X-Ray Diffraction and the Solid State.

505-3 Physical Properties of Crystalline Materials.

512-3 Introduction to Theoretical Elasticity.

513-3 Mechanics of Viscous Fluids.

514-3 Mechanics of Inviscid Fluids.

515-2 Wave Motion.

518-3 Introduction to Turbulence.

540-2 Elastic Stability.

542-2 Theory of Plates.

544-3 Advanced Design of Reinforced Concrete.

550-3 Advanced Compressible Fluid Flow.

561-3 Intermediate Vibrations.

580-1 to 4 Seminar.

592-1 to 4 Special Investigations in Engineering.

599-1 to 6 Thesis.

**THERMAL AND ENVIRONMENTAL ENGINEERING (Department,
Major [Engineering] Courses)**

The option in thermal and environmental engineering prepares graduates to provide engineering solutions to problems such as optimum energy utilization, conservation of resources and environmental protection by working in or across the areas associated with traditional engineering disciplines of mechanical and sanitary engineering. This option allows study in such areas as heat and mass transfer, thermal design, pollution control engineering (air, water, and solid waste) and process engineering. Previous graduates are successfully practicing in manufacturing and energy industries, in consulting engineering firms, in state and federal agencies and in graduate studies.

Bachelor of Science Degree, School of Engineering and Technology

**ENGINEERING MAJOR—THERMAL AND ENVIRONMENTAL ENGINEERING
SPECIALIZATION**

<i>General Studies Requirements</i>	29 ¹
GSA: 115 or 209 or substitute Geology 220. Substitute Physics 205a,b, 255a,b, Chemistry 224, 225 which are included under major course requirements.	
GSB	9
GSC	9
GSD: substitute mathematics	7
GSE	4
<i>Requirements for Major in Engineering</i>	103
Life or earth science	3
GSA 209 or 115 or Geology 220	
Chemistry 224, 225	7
Physics 205a,b, 255a,b	8

Mathematics 150, 250, 251, 305 and approved elective-3	17
Engineering (Core) 100, 200, 222, 260a,b, 300, 302, 311, 312, 313, 335, 345, 361, 385, 443a,b	42
Specialization in Thermal and Environmental Engineering	26
TEE (Core) 314, 404, 435, and 401 or 417 or 418	11
Technical electives in approved areas (at least 6 hours must be TEE credit)	15
<hr/> Total	<hr/> 132

¹Courses required for the major will apply toward 16 hours of General Studies making a total of 45 in that area.

Courses

Safety glasses, a slide rule with log-log scales (or the equivalent) and textbooks are required of all thermal and environmental engineering students.

314-4 Introduction to Environmental Pollution. Basic engineering aspects and interrelation of air, water and land pollution. Problems, sources and effects of pollution. Pollution abatement. State and Federal air and water quality standards and engineering systems for pollution abatement. Prerequisite: Chemistry 224, junior standing. Elective Pass/Fail.

400-3 Power and Refrigeration Cycles. Use of engineering thermodynamics in analysis of power and refrigeration cycles. Detailed treatment of various gas and vapor power cycles including combined gas and steam cycles. Thermodynamics of combustion. Gas and vapor refrigeration cycles. First and Second Law analysis of turbo-machinery. Prerequisite: Engineering 300.

401-1 Thermal Measurements Laboratory. Study of basic physical measurements used in the thermal sciences. Calibration techniques for temperature sensors. Transient and steady-state error analysis. Thermal and transport property measurements. Prerequisite: Engineering 302.

402-3 Intermediate Heat Transfer. Analysis of forced convective momentum and heat exchange in tubes and over surfaces. Applications to heat transfer equipment design and processes. Prerequisite: Engineering 302.

404-3 Thermal Systems Optimization. Simulation and optimization of thermal energy conversion systems based on principles of thermodynamics, heat transfer, and fluid mechanics. Mathematical modeling of the performance of turbines, pumps, fans, mass and heat exchangers, etc., from analytical predictions and experimental results. Stochastic treatment of experimental data. Application of the principal optimization methods encountered in engineering practice. Prerequisite: Engineering 302, 361.

406-3 Thermal Systems Design. Application of the principles of engineering analysis to the design of thermal systems. Consideration of such systems as refrigerators, building air conditioning systems, spacecraft control systems, solar heating systems, and gas liquefying systems. Prerequisite: Engineering 300, 302.

415-4 Wastewater Treatment. A study of the design equations used in physical, chemical, and biological treatment processes and comparison to design by state standards. Basics of the bacteria and their metabolism processes in the degradation of organic wastes. Treatment and disposal of sludges produced in wastewater treatment. Advanced waste treatment processes; reuse of wastewater. Prerequisite: 314.

416-4 Air Pollution Control. Engineering control theory, procedures, equipment, and economics related to particulate and gaseous emissions control. The environmental impact of controlling emissions. Sampling and analysis procedures. Laboratory work includes design, construction, and use of a source sampling system. Safety glasses are required. Prerequisite: 314.

417-1 Water Quality Laboratory. Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required. Prerequisite: 314.

418-1 Air Quality Laboratory. This laboratory consists of design, construction, and use of systems to measure and analyze ambient atmospheric pollution. Safety glasses required. Recommend concurrent enrollment in 314.

- 423-3 Waste Heat Management.** Energy sources and waste heat produced in their utilization. Management of heated surface water effluents to minimize their ecological impact; chemical, physical, and biological. Methods of waste heat disposal from electric power plants. Selection and design of waste heat disposal systems. Prerequisite: 314, Engineering 300, or consent of instructor.
- 435-3 Heat and Mass Transfer Processes.** Review of single phase and two phase heat transfer. Heat exchanger design. Mass transfer principles and processes. Processes involving simultaneous heat and mass transfer. Prerequisite: 302.
- 492-1 to 5 Special Problems in Engineering.** Engineering topics and problems selected by either the instructor or the student with the approval of the instructor. Five hours maximum course credit. Prerequisite: senior standing and consent of instructor.
- 500-3 Advanced Engineering Thermodynamics.**
- 501-3 Transport Phenomena.**
- 502-3 Advanced Heat Transfer.**
- 510-3 Solid Waste Collection and Disposal.**
- 515-3 Advanced Biological Treatment Processes.**
- 516-3 Water Resources Management.**
- 517-3 Industrial Waste Treatment.**
- 525-3 Small Particle Phenomena.**
- 531-4 Reaction Engineering and Rate Processes.**
- 532-3 Separation Processes and Equilibrium Operations.**
- 580-1 to 4 Seminar.**
- 592-1 to 4 Special Investigations in Engineering.**
- 599-1 to 6 Thesis.**

Engineering Biophysics (Major, Courses)

The program is essentially a five-year curriculum leading to the Master of Science degree in engineering biophysics. However, a full four-year undergraduate curriculum is offered leading to the degree of Bachelor of Science with a major in engineering biophysics. The undergraduate curriculum is interdisciplinary, emphasizing selected areas in the behavioral, engineering, life, mathematical, and physical sciences. The first two years of the program are sufficiently general and basic so the student can move freely from this program into the traditional scientific disciplines without penalty. The fifth year emphasizes the advanced aspects in the behavioral and life sciences and provides for the student optimum flexibility in electives as well as practical biomedical experience.

Students interested in this program will be advised by the administrator of the program or by members of the executive committee.

Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	11
English Composition	(3)
Speech	(2)
Writing Course	(2)
Foreign Language (French, German, or Russian recommended)	(4) + 4
Biological Science (Not General Studies)	6 ²
Mathematics 111	(4) + 1

Requirements for Major in Engineering Biophysics 60-62³

Required courses are selected in consultation with the administrator to ensure a background of basic courses in natural, physical, and social sciences.

Electives	2-4 ⁴
Total	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²With proper selection, these courses can also satisfy the GSA-2 requirement.
³It is assumed the student will take General Studies substitute courses and the hours in the major may be increased by an equivalent amount.
⁴By effecting footnote 2, electives can be increased to 7-9 credit hours.

Courses

492-1 Colloquy in Engineering Biophysics. Discussion of topics related to engineering biophysics; guest lecturers; field trips. Offered in spring semesters only. Each student in engineering biophysics should register for the colloquy each academic year in residence.
598-1 to 6 Internship in Engineering Biophysics.
599-1 to 6 Thesis.

Engineering Mechanics and Materials
(Department, Major [Engineering], Courses)

(SEE ENGINEERING)

Engineering Technology (Major, Courses)

Engineering technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the craftsman and the engineer at the end of the spectrum closest to the engineer.

All curricula in engineering technology are accredited by the Engineers' Council for Professional Development. These include the civil engineering technology, electrical engineering technology, and mechanical engineering technology specializations. ECPD recommends that graduates of baccalaureate programs be called engineering technologists.

Bachelor of Science Degree, School of Engineering and Technology

ENGINEERING TECHNOLOGY MAJOR—CIVIL ENGINEERING TECHNOLOGY SPECIALIZATION

The civil engineering technology specialization is primarily suited for those students interested in pursuing careers with highway departments or in construction industries. However, the broad range of studies insures a solid technical background in many areas of civil engineering technology. Graduates of the program are employed by railroads, coal companies, consulting engineering firms, state and local agencies, and various construction firms.

General Studies Requirements	45
Requirements for Major in Engineering Technology	72
GSA 106	(3)
GSD 118	(2)
Mathematics 111, 150, 250	(4) + 9
Physics 203, 253	(6) + 2
Engineering 222, 361	4
Engineering Technology 100, 102a, 202, 245a, 260a, b, 310a, b,	

311, 313a, 314a, 315, 318a, c, 363a, 363b or c, 364a, b, 365, 426a, approved technical electives-9	57
<i>Electives</i>	3
<i>Total</i>	120

ENGINEERING TECHNOLOGY MAJOR—ELECTRICAL ENGINEERING TECHNOLOGY
SPECIALIZATION

The electrical engineering technology specialization is designed to prepare technologists who are capable of technical design and who can contribute to the development and production of electrical circuits and devices. In addition, graduates are capable of participation in the planning and installation of power distribution systems and operating and maintaining complex electrical systems. Graduates of the program are employed in communications, power, electronics, sales, manufacturing, and other fields.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Engineering Technology</i>	72
GSA 106	(3)
GSD 118	(2)
Mathematics 111, 150, 250	(4) + 9
Physics 203a, b, 253a, b	(6) + 2
Engineering 222, 361	4
Engineering Technology 100, 102a, b, 245a, 260a, b, 304a, b, 313a, 318a, 332a, 403a, b, 437a, b, 438a, approved techni- cal electives-10	57
<i>Electives</i>	3
<i>Total</i>	120

ENGINEERING TECHNOLOGY MAJOR—MECHANICAL ENGINEERING TECHNOLOGY
SPECIALIZATION

The mechanical engineering technology specialization is designed to prepare graduates for a career in the power industry; and in addition, provides a background in general mechanical technology. Graduates are employed in industries which have a need for technologists trained in the generation, transmission, and utilization of mechanical energy.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Engineering Technology</i>	72
GSA 106	(3)
GSD 118	(2)
Mathematics 111, 150, 250	(4) + 9
Physics 203a, b, 253a, b	(6) + 2
Engineering 222, 361	4
Engineering Technology 100, 102a,b,c, 245a, 260a,b, 301a, 308a, 311, 313a,b, 318a,b, 320a,b, 424a,b, approved techni- cal electives-11	57
<i>Electives</i>	3
<i>Total</i>	120

Courses

Safety glasses, a suitable calculator or slide rule, and textbooks are required for most of the following courses.

100-0 Orientation. (Same as Industrial Technology 100.) Introduction to engineering and technology. Develops an understanding of the role of engineering and technology in industry and guides thinking in relation to occupational goals. Also includes introduction to use of the slide rule.

102-6 (2, 2, 2) Graphic Communication. Two hours of lecture and two hours of laboratory per week for each course. Drawing supplies required, costing approximately \$11.50. Problems workbook required for each course costing about \$5.00 per workbook. (a) Basic principles of graphic communication including orthographic (multiview) projection; sections and conventions; auxiliary views; dimensioning and tolerancing; and pictorial drawing. (b) Principles of graphic communication. The graphical solution of problems involving the spatial relationship of points, lines, and planes. Prerequisite: 102a. (c) Principles and practices of graphic communication with emphasis on the applications in mechanical, electrical, and industrial engineering technology. Prerequisite: 102b. Elective Pass/Fail.

202-2 Structural Graphics. Principles and practice in graphical communications as applied to structural design with emphasis on structural steel and concrete. Laboratory. Prerequisite: 102a.

236-2 Electrical Instrumentation. Theory and use of D.C. and A.C. instruments; measurement and error, units, standards, meters, bridges, oscilloscopes, electronic instruments, instruments for generation and analysis of waveforms, counters, and transducers. Laboratory. Prerequisite: Mathematics 111.

245-6 (3, 3) Electrical Systems for Industry. (a) Fundamentals of electrical lighting and industrial wiring. Motor types, synchronous motors, fractional-horsepower motors, applications, bearings, lubrication and rebuilding. Laboratory. Prerequisite: Mathematics 111. (b) Introduction to electronics: laboratory practices, oscilloscopes, meters, components, power supplies, amplifiers, and characteristics of semiconductor devices. Laboratory. Prerequisite: Mathematics 111.

260-7 (4, 3) Principles of Mechanics. (a) Statics and Strength of Materials. Principles of forces, moments, and static equilibrium; centroids, centers of gravity, and moments of inertia; stress and strain; torsion, bending, and combined stresses. (b) Dynamics. Friction; particles and rigid bodies in translation, rotation, and plane motion; relative motion; impulse and momentum; work and energy. Must be taken in a,b sequence. Prerequisite: Mathematics 150 or concurrent enrollment.

263-3 Fundamentals of Surveying. Development of basic surveying practices and use of the principle types of surveying equipment, linear and angular measurement, differential leveling, traverse calculations, topographic mapping. Laboratory. Civil engineer's scale required costing approximately \$3.00. Field notebook for each course costs approximately \$1.00. Prerequisite: Mathematics 111.

301-6 (3, 3) Refrigeration and Air Conditioning. (a) Discussion of refrigerating cycles. Refrigeration at more than one level. Operation and ratings of various types of compressors, evaporators, condensers, and automatic controls used in commercial refrigerating systems. Heat flow problems in condensers, evaporators, and cooling towers. Prerequisite: 313a. (b) Control of temperature and humidity in buildings, or other large areas. Air handling equipment, duct systems, and air distribution within the space. Fundamental principles and techniques for cooling and dehumidification for comfort. Equipment and control systems. Prerequisite: 313a.

304-7 (4, 3) Electrical Circuits. (a) Solutions to D.C. steady-state networks by branch, equivalent circuit, loop current, and node voltage methods. Study of network theorems. Extension of these topics to A.C. steady-state by use of the phasor transform. Laboratory. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Further topics in A.C. circuits: frequency response, resonance, filters, transformers and magnetic coupling, complex power, and dependent sources. Transient response by the classical solution of differential equations and by Laplace transform methods. Laboratory. Prerequisite: 304a, Mathematics 250 or concurrent enrollment.

308-6 (3, 3) Machine Design. (a) Strength and safety considerations in design of machine parts. Fatigue and stress concentrations, bearings, brakes, clutches and springs. Applications of the principles of mechanics to problems of design and development, mechanisms. Prerequisite: 260a. (b) Combined stresses, gearing, curved beams, high speed cams, thick cylinders, and flat plates. Student undertakes the design of a complete machine. Prerequisite: 308a, 311.

310-6 (2, 2, 2) Heavy Construction. (a) The fundamental elements of heavy construction planning, methods, and equipment. Prerequisite: junior standing or consent of instructor. (b) Continuation of construction methods and equipment. Prerequisite: junior

standing or consent of instructor. (c) Construction estimating and management procedures and techniques. Complete detailed contractor's estimates for bid are prepared for a heavy construction project. Civil engineer's scale required, costing approximately \$3.00. Prerequisite: junior standing or consent of instructor.

311-3 Strength of Materials. Statically indeterminate beams and beam deflections; combined static and dynamic loading; column theory; connections. Prerequisite: 260a.

313-6 (3, 3) Elementary Heat Power. (a) The fundamental laws of heat power, properties of systems, liquids, vapors, and liquid-vapor mixtures. (b) Engine cycles and applications. Must be taken in a,b sequence. Prerequisite: Mathematics 150.

314-8 (2, 3, 3) Soil Mechanics. (a) Laboratory determination of the basic properties of soils; components of soil surveys; engineering soil classifications. Laboratory. (b) Fundamental study of soil properties including: soil water and seepage, frost action, soil stabilization, stress distribution in soils. Prerequisite: 260a, 314a. (c) Introduction to foundation design; stress distribution in soils; shearing resistance and strength; consolidation and settlement; slope stability. Laboratory notebook required, costing approximately \$4.00. Prerequisite: 314b.

315-2 Elementary Structural Analysis. Applications of the principles of mechanics to the determination of forces and deflections in statically determinate structures; approximate methods of determining member forces in indeterminate frames. Laboratory. Prerequisite: 260a.

318-7 (2, 3, 2) Hydraulics and Pneumatics. (a) Fundamentals of fluid statics, basic fluid flow concepts for idealized fluids, flow networks, and introduction to viscous fluids. Prerequisite: 260b or concurrent enrollment. (b) Viscous flow in closed conduits, basic hydraulic machinery and fluid power systems. Laboratory. Prerequisite: 318a, Engineering 222. (c) Flow measuring devices; flow in open channels; hydrology; flood routing and flood control. Laboratory. Prerequisite: 318a.

320-4 (2, 2) Mechanical Laboratory. (a) Various types of measuring instruments, gas analysis, and lubricant testing. Laboratory. (b) Thermodynamic systems. Testing of internal combustion engines, fans, heat exchangers, and refrigeration systems. Laboratory. Safety glasses required, costing approximately \$5.00. Must be taken in a,b sequence. Prerequisite: 313a.

322-3 Internal Combustion Engines. The design and principles of operation of internal combustion engines. The Otto, Diesel, and Brayton cycles and the fundamental thermodynamic laws involved. Prerequisite: 313a.

323-2 Operation of Public Utilities. (See Economics 323.) Prerequisite: GSB 211 or consent of instructor.

332-6 (3, 3) Electromechanical Principles and Devices. (a) Introduction to D.C. and A.C. machinery. Theory and operating characteristics of D.C. generators and D.C. motors. Laboratory. Prerequisite: 304a or concurrent enrollment. (b) Theory and operating characteristics of polyphase and single-phase A.C. motors. Special applications of A.C. and D.C. motors. Laboratory. Safety glasses required, costing approximately \$5.00. Prerequisite: 304a or concurrent enrollment.

342-2 Technology Design. An elective project on any technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Prerequisite: senior standing.

363-8 (4, 2, 2) Surveying. (a) Use and care of surveying instruments; principles of surveying, computations; route surveying; field astronomy; other surveying concepts and applications. Laboratory. Prerequisite: 102a, Mathematics 111. (b) U.S. Public Land Systems; boundary surveying; introduction to geodesy; precise surveying. Laboratory. Prerequisite: 363a. (c) Topographic surveying; precise surveying least squares adjustment methods; other surveying applications and geodetic principles. Laboratory. Civil engineer's scale required, costing approximately \$3.00. Field notebook for each course costs approximately \$1.00. Prerequisite: 363a.

364-5 (2, 3) Highway Engineering Technology. (a) Highway administration, planning, economics, and finances. Highway surveys, plans, and computation. Traffic engineering. Prerequisite: 363a and senior standing or consent of instructor. (b) Highway design, drainage, roadside development, and subgrade structure. Instruction in all types of base courses, surfaces, and paving. Highway construction and maintenance. Laboratory. Prerequisite: 314a and senior standing or consent of instructor.

365-3 Water Treatment and Sanitation. Introduction, description, and design of potable water and wastewater treatment facilities. Chemical coagulation, sedimentation, disinfection, and hardness removal of water. Sanitation measures and control of communicable diseases. Laboratory.

403-8 (4, 4) Electronics Technology. (a) Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability, and feedback of single and multistage amplifiers. Parameters and applications of field-effect transistors, opto-electronic devices, thyristors, unijunction transistors and

amorphous semi-conductors. Laboratory. (b) Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators, and digital integrated circuits. Laboratory. Must be taken in a, b sequence. Prerequisite: 304b.

415-3 Elementary Concrete Design. Properties of concrete materials; design of concrete mixes; analysis and design of basic concrete structural elements using ACI design handbooks. Laboratory. Prerequisite: 315.

416-3 Elementary Structural Steel Design. Properties of structural steel shapes; types of structural steel material; analysis and design of simple structural elements and connections for steel buildings and bridges. Laboratory. Prerequisite: 315.

424-6 (3, 3) Power Systems Technology. (a) Fundamentals of basic power plant operation and equipment; e.g., fuels, steam generators, heat exchangers, turbines, pumps, and nuclear reactors. Prerequisite: 313a. (b) A study of cycles, heat balances, efficiencies and power plant economics. Student is exposed to the design considerations and trade-offs associated with the total design of a power plant. Prerequisite: 313b, 318b, 424a.

426-6 (2, 2, 2) Photogrammetry. (a) Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. Laboratory. Prerequisite: 363a or consent of instructor. (b) Rectification of tilted photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. Laboratory. Prerequisite: 426a or consent of instructor. (c) Analysis of aerial photographs to determine soil and rock formations and their properties; interpretations for engineering and regional planning purposes. Laboratory. Photos and maps required for each course, costing approximately \$3.00. Prerequisite: consent of instructor.

437-6 (3, 3) Communications Systems Technology. (a) Radio-frequency transmission-line theory. Electromagnetic fields in rectangular and circular waveguides. Laboratory. Prerequisite: 304b. (b) Communication systems with a unified treatment of various types of transmission systems with emphasis on the role of system bandwidth and noise in limiting the transmission of information. Laboratory. Prerequisite: 403a, 437a.

438-8 (4, 4) Design of Control and Digital Systems. (a) Fundamentals of control systems; equations of electrical, mechanical, hydraulic, and thermal systems; applications of Laplace transforms, transfer functions, block diagrams and flowgraphs. Computer implemented graphical analysis and design methods: root locus, frequency response, Nyquist diagrams, and compensator design. Continuous-systems simulation laboratory. Prerequisite: 304b, Engineering 222. (b) Design of digital systems; logic operations; number systems and applications. Digital systems simulation laboratory. Prerequisite: Engineering 222.

492-1 to 6 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Prerequisite: consent of instructor.

English (Department, Major, Courses)

The major in English is 33 semester hours. The English major may choose from five specializations.

The student who wishes to declare English as a major should consult the director of undergraduate programs in English early in his college career. Continuing students who wish to declare an English major should petition the Department of English for admission to the department. Transfer students should bring their transcripts and evaluation of transfer credit. Thereafter, all English majors must have their advance registration forms signed by an adviser in the Department of English. Only English courses which are completed with at least a *C* will fulfill a major requirement. Deviations from regular programs must have prior written departmental approval.

Students who wish to construct an inter-departmental major in English and certain related fields may do so in consultation and with the approval of an English department adviser.

All students are strongly urged to supplement their English majors through the study of classical and modern languages, as well as the study of foreign

literature in translation. Majors preparing for graduate school should take two years of a foreign language.

Although a minor field is not required, students are urged to consider complementary minor fields such as foreign languages and literatures, history, philosophy, and journalism.

ENGLISH CORE CURRICULUM

All students majoring in English will take the following courses:
English 302, 309, 390, and 471 or 472

**Bachelor of Science Degree, College of Education or
Bachelor of Arts Degree, College of Liberal Arts**

Students who wish to become certified teachers of English may pursue their major as follows:

<i>General Studies Requirements</i>	45
<i>Requirements for Major in English</i>	33
<i>Professional Education Requirements</i>	24 ¹
See Teacher Education Program, page 68.	
<i>Electives</i>	18
<i>Total</i>	120

In addition to the core curriculum teacher training candidates will take the following courses:
English 300; 485; a 400-level course in English literature before 1800; a 400-level course in American literature before 1900; a 400-level course in world literature; two electives chosen from 300 and 400-level English courses.

¹In order to qualify for entrance into the teacher education program and for a student teaching assignment, students must have a grade point average of at least 2.50 in the major.

Bachelor of Arts Degree, College of Liberal Arts

A student may wish to pursue one of several specializations in the College of Liberal Arts. The degree earned and the requirements for the degree are as follows:

<i>General Studies Requirements</i>	45
<i>College of Liberal Arts Requirements</i>	15
Refer to catalog section titled College of Liberal Arts	
<i>Requirements for Major in English</i>	33
<i>Electives</i>	27
<i>Total</i>	120

ENGLISH MAJOR—GENERAL EDUCATION OR GRADUATE SCHOOL SPECIALIZATION

In addition to the core curriculum, students will take seven electives from the 200, 300, and 400-level courses in English, with several courses at the 400-level. Students planning to enter graduate school are strongly urged to take two years of a foreign language or the equivalent. Students should consult

with their departmental adviser to achieve a suitable range and breadth of course work.

ENGLISH MAJOR—GENERAL WRITING AND CREATIVE WRITING SPECIALIZATION

In addition to the core curriculum, students should take at least two courses selected from English 281, 282, 283; at least two courses from 381, 382, 383; and English 492. Elective courses outside the Department of English may be accepted toward the major with prior written approval of the Department of English.

ENGLISH MAJOR—PREPROFESSIONAL SPECIALIZATION

In addition to the core curriculum, majors interested in such fields as law, business, and government will take the following courses:

English 300, 391, 445; four electives, which may concentrate on a special interest, and which, with the consent of the departmental adviser, may include courses in other departments.

ENGLISH MAJOR—DEPARTMENTAL HONORS PROGRAM SPECIALIZATION

Any of the specializations described in this catalog may be modified by a student's entry into the departmental honors program. The Department of English invites qualified students to enter the program.

Minor

The minor in English is a minimum of 18 semester hours. Minors are available with several specializations, and the following are listed as examples only. Students interested in English as a minor are invited to confer with the director of undergraduate programs in English, or an adviser in the Department of English.

ENGLISH MINOR—TEACHING SPECIALIZATION

For students who wish to meet the minimum certification requirements for teaching English in the secondary schools, the following courses are required: English 209; 300, 390; 471 or 472; and two of the following: English 302, 309, 445.

For the following minor specializations, these courses are recommended as part of the 18 hour minimum.

ENGLISH MINOR—PREPROFESSIONAL SPECIALIZATION

English 209; 300; 391; 445; 471 or 472.

ENGLISH MINOR—GENERAL WRITING OR CREATIVE WRITING SPECIALIZATION

Writing minors should take at least one course from English 290, 390; two courses from English 281, 282, 283; two courses from 381, 382, 383.

ENGLISH MINOR—WORLD LITERATURE SPECIALIZATION

English 209; 390; and four courses from 425, 438, 445, 455, 465. For further information, see catalog section titled Comparative Literature.

ENGLISH MINOR—OTHER SPECIALIZATIONS

Students wishing to arrange other specializations in English should consult the director of undergraduate programs in English or one of the departmental advisers.

Courses

209-3 Introduction to the Forms of Literature. Poetry, drama, and fiction. Statement and illustration of the techniques of the three genres over the range of American

and English literature. Substitutes for GSC 209. Prerequisite: GSD 117, 118, or 119, or equivalent.

281-3 Creative Writing: Beginning Fiction. Introduction to basic techniques of writing creative prose with emphasis on characterization, plot, and narrative devices. Study and application of various methods of short story writing. Exercises. Critiques. Prerequisite: GSD 119 or consent of instructor. Elective Pass/Fail.

282-3 Creative Writing: Beginning Poetry. Introduction to basic theories and techniques of poetry writing with emphasis on metrics, forms, and poetic stances. Study and application of each of these general aspects of writing poetry. Exercises. Critiques. Prerequisite: GSD 119 or consent of instructor. Elective Pass/Fail.

283-3 Creative Writing: Beginning Drama. Introduction to basic problems and techniques of dramatic presentation. Emphasis on producing works for the amateur market, with a secondary purpose of advising future teachers of possibilities of using plays, skits, etc., as teaching aids. Exercises in creating original dramatic material. Critiques. Prerequisite: GSD 119 or consent of instructor. Elective Pass/Fail.

290-3 Intermediate Expository Writing. Designed for any University student, to improve writing skills beyond freshman composition. Based on individual needs and areas of specialization. Prerequisite: GSD 117, 118, or 119, or equivalent.

300-3 Introduction to Language Analysis. Nature of language and linguistic inquiry. Dialectology, usage, and chief grammatical descriptions of present day American English. Required of teacher training candidates.

302-3 A Literary History of England. Social, historical, and intellectual backgrounds of English literature, with selected readings from each period.

309-3 A Literary History of the United States. Social, historical, and intellectual backgrounds of American literature, with selected readings for each period.

381-3 Creative Writing: Advanced Fiction. Emphasis on the long short story and novella with exercises and study oriented to more sustained forms of prose than the short story. Theories and techniques of extended fictional forms treated. Critiques. Prerequisite: 281 or consent of instructor. Elective Pass/Fail.

382-3 Creative Writing: Advanced Poetry. Concentration on modern forms and theories of poetry. Writing assignments and exercises in the application of various poetic techniques, primarily 20th century American. Critiques. Prerequisite: 282 or consent of instructor. Elective Pass/Fail.

383-3 Creative Writing: Advanced Drama. Concentration on serious literary statements through drama, and on practical instruction in writing extended and concentrated dramatic forms. Presentation of various dramatic theories through the study of representative plays. Drama writing exercises and critiques. Prerequisite: 283 or consent of instructor. Elective Pass/Fail.

390-3 Advanced Composition. Expository writing. Prerequisite: C average in GSD 101 and 117, 118, or 119, or equivalent. Open to English majors and minors or with consent of department.

391-3 Precision in Reading and Writing. To improve the student's ability to read and write with precision and clarity, depending on reading complex material (requiring no particular background for comprehension) and on writing precis of it. Prerequisite: grade of B in GSD 117, 118, or 119 or C in English 290.

393-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: departmental approval. Elective Pass/Fail.

400-3 Introduction to English Linguistics. Methods of structuralizing: phonetics, phonemics, morphemics, syntax. Especially recommended for students preparing to teach English to native speakers. Elective Pass/Fail.

403-3 History of the English Language. A survey of the development of the language from Indo-European to modern English with special emphasis on Middle and Early Modern changes. Elective Pass/Fail.

404-3 Middle English Literature Excluding Chaucer. Elective Pass/Fail.

405-3 Middle English Literature: Chaucer. Elective Pass/Fail.

412-3 English Non-Dramatic Literature: The Renaissance. Elective Pass/Fail.

413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century. Elective Pass/Fail.

414-3 English Non-Dramatic Literature: The Later Eighteenth Century. Elective Pass/Fail.

417-3 Black Literature. Studies in American and African Black literature, with major emphasis upon contemporary Black expression. Elective Pass/Fail.

421-3 English Romantic Literature. Elective Pass/Fail.

422-3 Victorian Poetry. Victorian poets: Tennyson, Browning, Arnold, and other poets in England. Elective Pass/Fail.

423-3 Modern British Poetry. Elective Pass/Fail.

425-3 Modern Continental Poetry. Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece. Elective Pass/Fail.

- 426-3 American Poetry to 1900.** Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets. Elective Pass/Fail.
- 427-3 American Poetry from 1900 to the Present.** The more important poets since 1900. Elective Pass/Fail.
- 436-3 to 9 (3 per topic) Major American Writers.** Significant writers of fiction and nonfictional prose from the Puritans to the 20th Century. May be repeated only if topic varies, and with consent of department. Elective Pass/Fail.
- 438-3 Intellectual Backgrounds of American Literature.** The relationship of basic ideas in America to American literature. Elective Pass/Fail.
- 445-3 Cultural Backgrounds of Western Literature.** A study of ancient Greek and Roman literature, Dante's *Divine Comedy*, and Goethe's *Faust*, as to literary type and historical influence on later Western writers. Elective Pass/Fail.
- 451-3 Eighteenth Century English Fiction.** Defoe through Jane Austen. Elective Pass/Fail.
- 452-3 Nineteenth Century English Fiction.** Victorian novel: 1830-1880. Elective Pass/Fail.
- 453-3 Modern British Fiction.** Elective Pass/Fail.
- 455-3 Modern Continental Fiction.** Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. Elective Pass/Fail.
- 458-3 American Fiction to the Twentieth Century.** The novel in America from its beginnings to the early 20th Century. Elective Pass/Fail.
- 459-3 American Fiction of the 20th Century.** Trends and techniques in the American novel and short story since 1914. Elective Pass/Fail.
- 460-3 Elizabethan and Jacobean Drama.** Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Green, Peele, Kyd, Marlowe, Heywood, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley. Elective Pass/Fail.
- 462-3 English Restoration and 18th Century Drama.** After 1660, representative types of plays from Dryden to Sheridan. Elective Pass/Fail.
- 464-3 Modern British Drama.** Elective Pass/Fail.
- 465-3 Modern Continental Drama.** The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal. Elective Pass/Fail.
- 468-3 American Drama.** The rise of the theater in America, with readings of plays, chiefly modern. Elective Pass/Fail.
- 471-3 Shakespeare: The Early Plays, Histories, and Comedies.**
- 472-3 Shakespeare: The Major Tragedies, Dark Comedies, and Romances.**
- 473-3 Milton.** A reading of a selection of the minor poems, of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, and the major treatises. Elective Pass/Fail.
- 481-3 Literature for the Adolescent.** Criteria for evaluation of literary materials for junior and senior high school, with emphasis on critical approaches in selection of literature. Elective Pass/Fail.
- 484-3 Non-Print Media and English.** Theory and application of film and other non-print media to the study and teaching of English. Especially emphasized is the relationship between print and non-print communications systems and verbal and non-verbal systems. Prerequisite: consent of instructor.
- 485-3 Problems in Teaching Composition, Language, Literature and Reading in High School.**
- 491-3 Expository Technical Writing.** An all-university course designed to teach advanced academic and professional (non-fictional) writing skills. Prerequisite: GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.
- 492-3 to 9 (3 per topic) Creative Writing: Senior Writing Project.** The topic varies among the writing of poetry, drama, or prose. A directed written project will be submitted at the end of the semester in prose, poetry, or drama. A collection of short stories or poems, a novel or play of what instructors consider to be acceptable quality will fulfill the Senior Project requirement. An alternative to the Senior Project may be an internship in a publishing firm if appropriate arrangements can be made by the department. Prerequisite: consent of instructor. Elective Pass/Fail.
- 493-3 to 9 (3 per topic) Special Topics in Literature and Language.** Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: consent of instructor. Elective Pass/Fail.
- 495-3 Literary Criticism.** Includes both history of criticism and modern criticism. Open only to seniors and graduate students. Elective Pass/Fail.
- 497-3 to 9 (3 per topic) Senior Honors Seminar.** Topics vary yearly. May be repeated as the topic varies. Prerequisite: departmental approval and undergraduate status.

- 499-2 to 6 (2 to 3, 2 to 3) **Readings in Literature and Language.** For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours.
- 500-2 **Materials and Methods of Research in Literature.**
- 501-3 **Old English Grammar.**
- 502-3 **Beowulf.**
- 503-3 **Old Norse.**
- 504-3 to 9 (3 per topic) **Studies in Middle English Literature.**
- 505-3 to 9 (3 per topic) **Studies in Chaucer.**
- 511-3 to 9 (3 per topic) **Studies in Sixteenth Century English Non-Dramatic Literature.**
- 512-3 to 9 (3 per topic) **Studies in Seventeenth Century English Non-Dramatic Literature.**
- 513-3 to 9 (3 per topic) **Studies in English Literature of the Restoration.**
- 514-3 to 9 (3 per topic) **Studies in Eighteenth Century English Literature.**
- 518-3 to 9 (3 per topic) **Studies in British Literature, 1885 to 1914.**
- 519-3 to 9 (3 per topic) **Studies in British Literature since 1914.**
- 521-3 to 9 (3 per topic) **Studies in English Romantic Writers.**
- 522-3 to 9 (3 per topic) **Studies in Victorian Poets.**
- 524-3 **Studies in the Metaphysical Poets.**
- 535-3 to 9 (3 per topic) **Studies in American Transcendentalism.**
- 536-3 to 9 (3 per topic) **Studies in Early Nineteenth Century American Writers.**
- 537-3 to 9 (3 per topic) **Studies in Later Nineteenth Century American Writers.**
- 538-3 to 9 (3 per topic) **Studies in Twentieth Century American Writers.**
- 543-3 to 9 (3 per topic) **Studies in Victorian Non-Fiction Prose.**
- 552-3 to 9 (3 per topic) **Studies in the Victorian Novel.**
- 560-3 to 9 (3 per topic) **Studies in the English Renaissance Drama.**
- 571-3 to 9 (3 per topic) **Studies in Shakespeare.**
- 579-3 to 12 (3 per topic) **Studies in Modern Literature.**
- 580-3 **Traditional Themes in Literature.**
- 581-3 to 9 (3 per topic) **Problems in Teaching English.**
- 585-2 **Teaching College Composition.**
- 593-3 to 9 (3 per topic) **Special Topics in Literature and Language.**
- 595-1 to 9 **Independent Readings.**
- 596-3 **Stylistics.**
- 600-1 to 36 (1 to 16 per semester) **Dissertation.**

Family Economics and Management (Department, Major, Courses)

Departmental objectives are to develop students' knowledge and understanding of three broad areas of family resource management. These are (1) the consumer's ability to handle available resources, (2) those with limited or restricted resources, and (3) the social economic aspects of housing the family in relation to both the household and community. The department offers two specializations: consumer services in business, and family services consultant, leading to a Bachelor of Science degree. Both of the programs are designed to promote the growth and development of students to qualified professionals.

In addition, the department offers a minor in consumer studies.

Bachelor of Science Degree, College of Human Resources

FAMILY ECONOMICS AND MANAGEMENT MAJOR—CONSUMER SERVICES IN BUSINESS SPECIALIZATION

This program is designed to give students an understanding of business and public relation aspects of organizations as they affect the consumer's ability to satisfy his wants in the marketplace. The program deals with issues and problems consumers face in managing and selecting specific goods—durable, non-durable, or services. Promotional and testing work relative to effective consumer choice is emphasized.

General Studies Requirements 45
 GSB 202, 211 must be included

*Requirements for Major in Family Economics and Management with
Specialization in Consumer Services in Business* 57

 Family Economics and Management 320, 330, 340, 341, 350, 351,
 plus 3 additional hours from 420, 430, 451 19

 Chemistry 140a 4

 Clothing and Textiles 127a, 104 4

 Food and Nutrition 100 plus 5 hours from
 256, 321, 335, 356 8

 Interior Design 131 4

 Marketing: select 6 hours 6

 Select 12 additional hours from journalism,
 radio-television, and speech 12

Electives 18

Total 120

FAMILY ECONOMICS AND MANAGEMENT MAJOR—
FAMILY SERVICES CONSULTANT SPECIALIZATION

This specialization is designed to give students a knowledge and understanding of the family's allocation of resources. The low-income family is of particular interest in this specialization. Elective courses may reflect the student's personal employment goals in a variety of public and private social welfare agencies. A program is tailored to meet theoretical, as well as applied, concepts in preparing students to serve individuals and families of various ages, physical abilities, and income levels.

General Studies Requirements 45

*Requirements for major in Family Economics and Management with
Specialization in Family Services Consultant* 54

 GSA 209 (3)

 GSB 202, 203, 211 (10)

 Family Economics and Management 320, 330, 350, 351, 340, 341,
 plus 3 hours selected from 420, 430, 445, 451 19

 Child and Family: 5 hours from 227, GSB 206, 230, 341 5

 Clothing and Textiles 127a or 104 2

 Family Economics and Management 370, 494-3 6

 Food and Nutrition 100 or GSE 236 2-3

 Home Economics Education 307 2

 Interior Design 131 4

 Social Welfare 375, 383 6

 Select additional hours in psychology, social welfare,
 or sociology 7-8

Electives 21

Total 120

Minor in Consumer Studies

The consumer studies minor offered through the Department of Family Economics and Management is designed to give students background in con-

sumer economics and home management. The selection of courses is flexible so that course work can be adapted to the special interests of students with diverse goals and backgrounds.

Required courses: Family Economics and Management 350 and 340; 12 hours to be selected from the following: Family Economics and Management 240, 301, 320, 330, 341, 351, 370, 407, 420, 430, 451, 494, 490, and GSB 346. A maximum of 6 hours may be selected from Food and Nutrition 100, Child and Family 227, and Journalism 370.

Courses

240-3 Consumer Resources. An introduction to the resources available to young adults in tackling consumer problems and disputes in housing, automobile care, health services, food purchases, educational expenditures, money management, and other areas of interest to the student. Special attention is given to community and university agencies such as IPIRG, tenant union, chamber of commerce, attorney general's office, and other organizations helpful in resolving problems.

320-2 Household Equipment. Materials, construction, selection, operation, and care of equipment to provide maximum satisfaction to the family are identified. Some emphasis placed on design and use of kitchen and laundry areas.

330-3 Housing. An examination of the physical characteristics of housing as they relate to family needs, wants, and capabilities, as well as the social and economic factors which affect satisfaction associated with family shelter. Field trip.

340-3 Consumer Problems. Study of family income and expenditure patterns, selection of commodities and services, and an analysis of consumer protection devices.

341-3 Consumers and the Market. The impact of market and governmental activities on consumers' decision-making. Analysis and evaluation of programs designed to inform and to protect consumers. Prerequisite: 340.

350-3 Management of Family Resources. A study of factors affecting the management of the home in meeting needs of individuals and creating a satisfying environment for the family. Special consideration given to management of time, money, and energy resources.

351-2 Home Management Practicum. Analysis of current management situations and family resources use with practical application of basic principles. Additional costs required. Prerequisite: 350 and consent of chairperson.

370-3 Management for Low-Income Families. Job-oriented course for social welfare careers; selected concepts in family economics and management with application to the low-income family.

380-2 to 6 Special Problems. Selection and investigation of a special problem under personal supervision of departmental faculty, approved by chairperson and instructor. Every semester.

407-1 to 3 Workshop. Designed to aid workers in professions related to use of family resources. Emphasis for each workshop will be stated in the announcement of the course. Every semester.

420-3 Trends in Household Equipment. Design, function, principles of operation, current trends, and ecological problems related to equipment use in household and society are considered. Prerequisite: 320.

430-3 Housing Alternatives. Selected aspects of the housing market and their relationship to changing life styles of households. Structure, operations and performance of the housing market and home building industry, housing finance, and contemporary housing problems and issues are considered. Fall Semester. Prerequisite: 330 or consent of instructor.

445-3 Family Financial Management. Developments in family financial management and the evaluation of methods and procedures for helping families, with emphasis on the role of the consultant. Case studies and simulation, as well as field problems, are included. Fall semester and alternate summers. Prerequisite: 340 and 350, equivalent, or consent of instructor.

451-3 Household Activity Analysis. A study of work methods and place, as well as the characteristics of the worker, in relation to solving problems of employed, full-time, and handicapped home managers.

480-3 Women in the Home and Labor Market. An evaluation and interpretation of the economic contributions of women in household production and in the labor market. Related issues such as fair employment practices, role conflicts, and legal issues will be considered.

490-1 to 4 Readings. Supervised readings on selected equipment, family or consumer economics, housing, or management topics. Every semester. Prerequisite: six hours of family economics and management and consent of chairperson.

- 494-1 to 4 **Field Experience.** Supervised learning experiences in an acceptable employment area. Every semester. Prerequisite: 370 and consent of chairperson.
- 500-3 **Research Methods.**
- 530-3 **Societal Factors in Housing.**
- 535-3 **Housing Consumption.**
- 540-3 **Consumption Trends.**
- 550-3 **Advanced Home Management.**
- 570-3 **Seminar in Family Economics and Management.**
- 592-1 to 5 **Special Problems.**
- 599-1 to 6 **Thesis.**

Finance (Department, Major, Courses)

The financial implications of decisions in both business and government are daily becoming more complex. Within the firm, financial considerations permeate the central decisions of research, engineering, production and marketing. Within governmental activities, sophisticated financial techniques are becoming increasingly important. The financial executive thus takes a key role in the successful management of both business and governmental operations.

The finance curriculum offers two areas of specialization to meet the varied interests of students: (1) financial management and (2) financial institutions. The financial management program provides the background for a career in the financial operations of business firms and public institutions. The financial institutions specialization is designed for those interested in the operations of financial intermediaries and financial markets.

Bachelor of Science Degree, College of Business and Administration

General Studies Requirements	45
Professional Business Core (see page 64.) ²	47
Requirements for Major in Finance	21
Finance 323, 325, 421	9
Specialization (Choose one)	12
Financial Institutions	
Select four: 324, 326, 327, 328,	
372, 475	12
Financial Management	
Select one additional upper division	
accounting course	(3) ¹
Select three: 327, 372, 422, 475, 480	9
Electives	7
Total	120

¹Hours shown in parentheses are already included in total hours shown for professional business core.
²Courses outside of major should be selected from: Accounting 341, 321, 322, or 365; Economics 315, 330, 340, or 341.

Courses

- 271-3 **Business Law I.** Legal problems arising from situations involving contracts and agency and business organizations. Elective Pass/Fail.
- 300-3 **Internship in Finance.** Designed to provide an opportunity to relate certain types of work experience to the student's academic program and objectives. Approved internship assignments with cooperating companies in the fields of finance are coordinated by a faculty member. Not repeatable for credit. Prerequisite: consent of department chairman. Mandatory Pass/Fail.
- 301-1 to 6 **Readings in Finance.** Readings in classical and current writing on selected

topics in various areas in the field of finance. Prerequisite: consent of department chairman. Mandatory Pass/Fail.

320-3 Introduction to Business Finance. Principal problems of managing the finance function of a business firm. Emphasis on asset acquisition and management, and financial structure planning and management. Prerequisite: Accounting 222, Economics 215, Administrative Sciences 208 (or concurrent enrollment.)

323-3 Investments. Survey of the problems and procedures of investment management; types of investment risks; investment problems of the individual as well as the corporation. Elective Pass/Fail.

324-3 Security Analysis. Application of investment principles to investment policy; analytical principles and techniques; analysis of fixed income corporate securities, of senior securities with speculative features, of common stocks, of government and municipal securities, and of investment company securities. Prerequisite: 320, 323.

325-3 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: Economics 214, 215.

326-3 Management of Financial Institutions. Principal policies and problems which confront top management. Emphasis on liquidity, loans, investments, deposits, capital funds, financial statements, organization structure, operations, personnel, cost analysis, and public relations. Prerequisite: 320, Economics 315.

327-3 Insurance. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Elective Pass/Fail.

328-3 Real Estate. Problems of real estate ownership, management, financing and development. Elective Pass/Fail.

329-3 Advanced Topics in Insurance. Continuation of Finance 327. Insurance and risk management. Includes a detailed investigation of company practices with regard to rate-making, risk selection and underwriting, and statement preparation. Emphasis is on coverages not studied in basic course.

370-3 The Legal and Social Environment of Business. An examination of the legal, social, and political forces that influence business and businessmen. Particular attention to the role of law as an agency of social control in the modern business society.

372-3 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, and property.

421-3 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Prerequisite: 320.

422-3 Acquisitions, Divestments, and Recapitalization. A study of the issues involved in developing financial plans for external growth, divestment, and recapitalization. The case approach is emphasized in the course. Prerequisite: 320.

475-3 Forecasting and Budgeting. Methods and problems associated with the development of data used in planning financial activities. Prerequisite: 320.

476-3 Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions, and legislation. Concern is on long-run legislative impact on manpower planning, dispute settlement, and utilization of employment resources. Prerequisite: Administrative Sciences 385 or consent of instructor. Elective Pass/Fail.

480-3 International Financial Management. Financial behavior of multinational firms. Emphasis on the modifications of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 320 and Economics 315.

Food and Nutrition (Department, Major, Courses)

Students will be required to take field trips in those courses so designated with the expenses pro-rated for each student. Appropriate uniforms will be required of all students enrolling in those courses that involve preparation of food.

Bachelor of Science Degree, College of Human Resources

FOOD AND NUTRITION MAJOR—DIETETICS SPECIALIZATION

These courses give a strong scientific education to those interested in becoming dietitians in hospitals, college dormitories, industrial plants, health clinics, laboratories, or public health and welfare organizations. They meet the requirements of the American Dietetics Association.

General Studies Requirements 45

Requirements for Major in Food and Nutrition with Specialization

in Dietetics 53-54

 GSA 115, 209 (6)

 GSB 202 (3)

 Accounting 210 or equivalent 3

 Administrative Sciences 301 or Psychology 320 3

 Animal Industries 310 3

 Chemistry 140a, b (4) + 4

 Child and Family 237 3

 Food and Nutrition 100, 156, 256, 320, 335,
 356, 360a, 361, 362, 363, 390, 420 31

 Home Economics Education 307 or Psychology
 307 2-3

 Microbiology 301 4

Electives 21-22

 Recommended Electives: Child and Family 227; Electronic
 Data Processing 107; Food and Nutrition 321, 360b, 372,
 373, 421, 490; Microbiology 421, 422; Physiology 300

Total 120

FOOD AND NUTRITION MAJOR—FOOD AND LODGING SYSTEMS MANAGEMENT
SPECIALIZATION

These courses prepare students for positions as food systems managers for restaurants, hotels, school food service, public and private lodging facilities, airlines, industrial feeding, resorts, institutions, hospitals and clubs. They meet the requirements as set forth by industry, the Council of Hotel, Restaurant, and Institutional Education, and the National Restaurant Association. Through this program in the hospitality field, transfer students from community colleges also will be able to complete their baccalaureate degrees.

General Studies Requirements 45

Requirements for Major in Food and Nutrition with Specialization

in Food and Lodging Systems Management 57

 GSA 115, 209 (6)

 GSB 202 (3)

 Accounting 221, 222 6

 Administrative Sciences 304, 385 6

 Animal Industries 310 3

 Chemistry 140a (4)

 Finance 271 3

 Food and Nutrition 100, 156, 256, 335, 360a,b,
 361, 362, 363, 371-4, 373 29

 Marketing 304 3

 Microbiology 301 4

 Psychology 320 3

Electives 18

 Recommended electives: Chemistry 140b; Child and Family
 227, 237; Food and Nutrition 320, 321, 372, 390, 420, 421;
 Microbiology 421

Total 120

FOOD AND NUTRITION MAJOR—FOOD AND NUTRITION SCIENCE SPECIALIZATION

These courses give a strong scientific education to those interested in preparing for graduate study in food, nutrition, or related discipline; for research in university, industrial, or governmental laboratories; or for educational and promotional work in industry or public health organizations.

General Studies Requirements 45

Requirements for Major in Food and Nutrition with Specialization
in Food and Nutrition Science 52

- GSA 115, 209 (6)
- GSB 202 (3)
- Chemistry 222a,b, 340, 341, 352 (4) + 14
- Food and Nutrition 100, 156, 256, 320, 356, 390, 420, 421 22
- Mathematics 110a,b (4) + 1
- Microbiology 301, 421, 422 9
- Physiology 411a 2
- Psychology 211 4

Electives 23

Recommended electives: Chemistry 451a,b; Child and Family 227, 237; Food and Nutrition 490; Health Education 490; Physiology 300, 410a,b, 420.

Total 120

FOOD AND NUTRITION MAJOR—FOODS IN BUSINESS SPECIALIZATION

These courses are for students who desire to enter the business field as home service representatives for utility companies, as demonstrators for manufacturers, or for other educational, experimental, and promotional work with household equipment and foods.

General Studies Requirements 45

Requirements for Major in Food and Nutrition with Specialization
in Foods in Business 53

- GSA 115, 209 (6)
- GSB 202 (3)
- Animal Industries 310 3
- Accounting 210 or equivalent 3
- Administrative Sciences 301 or 304 3
- Chemistry 140a,b (4) + 4
- Family Economics and Management 320, 341, 420 8
- Food and Nutrition 100, 156, 256, 320, 321, 335, 356 19
- Marketing 304, 363 6
- Microbiology 301 4
- Radio-Television 467 3

Electives 22

Recommended electives: Child and Family 227, 237; Clothing and Textiles 304a; Food and Nutrition 371, 420; Interior Design 131, 300; Radio-Television 300M.

Total 120

Courses

- 100-3 Fundamentals of Nutrition.** Emphasis on basic principles of food and nutrition in relation to personal health. Elective Pass/Fail.
- 156-3 Fundamentals of Foods.** An introduction to the basic principles and techniques of food preparation.
- 247-3 (1, 1, 1) The School Lunch Program.** (a) Food purchasing; (b) quantity food production; and (c) nutrition practices in the school lunchroom. Elective Pass/Fail.
- 256-3 Science of Food.** Application of scientific principles of food preparation. Prerequisite: 156, Chemistry 140 or equivalent.
- 320-3 Nutrition.** Principles of nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisite: 100, Chemistry 140 or equivalent.
- 321-2 Food and Nutrition Demonstration.** Emphasis on principles of food and nutrition including food standards and demonstration techniques. Field trip. Prerequisite: 256.
- 335-2 Meal Management.** The selection, purchase, preparation and service of food with emphasis on time and money management. Prerequisite: 256.
- 356-3 Experimental Foods.** Experimental approach to the study of factors influencing the behavior of foods. Individual problems. Prerequisite: 256.
- 360-6 (3, 3) Quantity Food Production.** (a) Use of power equipment, standardized formulas, and techniques of quantity preparation and service of food to large groups (b) Practical experiences in area food service units. Prerequisite: 256 or equivalent.
- 361-2 Food Service Organization and Management.** Policies, budgets, supervision, and personnel in feeding large groups. Field trip.
- 362-2 Institution Equipment and Layout.** Selection and arrangement of various types of institutional food service equipment, including materials, construction operation, cost, use and care. Field trip. Prerequisite: 361.
- 363-2 Food Purchasing for Institutions.** Principles and methods of purchasing food in quantity. Field trip. Prerequisite: 361.
- 371-2 to 4 Field Experience.** Opportunity for supervised learning experiences in the student's major. Prerequisite: 361 or equivalent and consent of chairman. Elective Pass/Fail.
- 372-2 Food Systems in the Lodging Industry.** Principles and concepts in developing and operating food production systems in the lodging and tourism industry. Prerequisite: Accounting 210 or equivalent.
- 373-2 Food and Beverage Controls.** Duties and responsibilities of the manager in restaurant, catering, hospitals, and club operations. The use of management methods in budgeting, forecasting, controlling costs, and establishing operational policies in food and beverage cost control. Prerequisite: Accounting 210 or equivalent.
- 390-3 Diet Therapy.** Physiological and biochemical changes in certain diseases with emphasis on those involving nutritional therapy. Prerequisite: 320.
- 420-2 Recent Developments in Nutrition.** Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent. Elective Pass/Fail.
- 421-2 Recent Trends in Food.** Critical study of current scientific literature in food. Prerequisite: 320 or equivalent. Elective Pass/Fail.
- 481-2 Readings.** Supervised readings for qualified students. Prerequisite: 320 or equivalent, consent of instructor and department chairman. Elective Pass/Fail.
- 490-2 Nutrition and Growth.** Lectures, readings, and discussion on nutrition in relation to human growth. Prerequisite: consent of instructor and department chairman. Elective Pass/Fail.
- 500-3 Research Methods.**
- 515-1 to 4 (1, 1, 1, 1) Seminar.**
- 520-2 Advanced Nutrition.**
- 556-3 Advanced Experimental Foods.**
- 572-2 to 4 (2, 2) Special Problems.**
- 599-1 to 6 Thesis.**

Foreign Languages and Literatures (Department, Majors, Courses)

Majors and minors are offered in classical studies, French, German, Russian, and Spanish. Minors are also offered in Chinese, classical Greek, East Asian Civilizations, Japanese, and Latin. Courses are offered in Italian and Por-

tuguese. A student majoring in a foreign language who has taken four years of that language in high school is expected to begin with 300-level courses and to take more upper level courses. Transfer students planning to major in a foreign language must complete a minimum of 12 semester hours of courses in that language at Southern Illinois University at Carbondale. No courses completed with a grade below C will be counted toward fulfillment of the requirements for a major. Every foreign language major must have a departmental advance registration form, signed by the appropriate adviser in the department, before proceeding to college advisement and registration.

Bachelor of Arts Degree, College of Liberal Arts

(WITHOUT SECONDARY SCHOOL TEACHING CERTIFICATE)

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	15
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.	
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classical studies, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level.	
<i>Electives</i>	24
<i>Total</i>	120

¹See individual language listings for specific requirements.

Bachelor of Arts Degree, College of Liberal Arts

(WITH SECONDARY SCHOOL TEACHING CERTIFICATION)

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	15
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.	
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classical studies, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages 436 will be one of those courses required on the 400-level for majors in French, German, Russian, and Spanish.	

<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Total</i>	120

¹See individual language listings for specific requirements.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45 ²
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classical studies, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages 436 will be one of those courses required on the 400-level for majors in French, German, Russian, and Spanish.	
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Electives</i>	15
<i>Total</i>	120

¹See individual language listings for specific requirements.
²See catalog section titled Secondary Education for specific certification requirements.

Placement

The student who has completed only one year of foreign language in high school will usually begin with the first semester course. The student who has completed two or more years of high school French, German, Russian, or Spanish, and plans to continue with that language in college, is required to take a placement/proficiency examination. Students having completed two or more years of high school foreign language other than French, German, Russian, or Spanish should consult the appropriate language section of the department for placement.

Minor

A minor in a foreign language is constituted by 18 hours in courses above the first-year level. See individual language listings for specific requirements. State certification requirements, in terms of total semester hours of subject matter courses, may be met in part by counting first-year foreign language courses or by doing additional advanced work.

A minor in classical studies or East Asian civilizations is constituted by 15 hours of courses to be selected in consultation with the appropriate sectional adviser.

GENERAL FOREIGN LANGUAGE COURSES

Courses

300-3 to 9 (3, 3, 3) Life and Its Expression in the Arts. Lectures and discussion of a selected theme related to the expression of human experience in the arts of such

countries as Greece, Italy, Spain, France, Germany, Russia, China, and Japan. Students will do outside readings in English translations. Lectures will be given by several members of the department of Foreign Languages and Literatures, and will often be illustrated with films, slides, recordings, and other audiovisual aids. Elective Pass/Fail.

301-2 Psychoanalysis and Literature. Exposition and discussion of Freud's relevance to literary criticism with special emphasis on the literary work as an act and a means for communication. The reading list will include Moliere, Dostoyevsky, Stendhal, Balzac, and Flaubert. Lectures and readings in English. Elective Pass/Fail.

302-2 Sociology of Literature. An analysis of the literary work as symbolic of reality insofar as it expresses the relationship of historical, philosophical, and economic structures of human consciousness. The readings will be drawn from Beckett, Sartre, Zamyatin, Babel, Malraux, and Solzhenitsyn. Lectures and readings in English. Elective Pass/Fail.

436-3 Methods in Teaching Modern Foreign Languages. Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student's specific language field. Required of prospective teachers of modern foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Russian, or Spanish. Elective Pass/Fail.

437-2 to 6 (2, 2, 2) Workshop in High School Foreign Language Instruction. Familiarizes high school teachers with recent curricular developments in foreign language teaching with emphasis on practical classroom application of instructional innovations. Prerequisite: 436 or consent of instructor.

506-1 to 4 Research Problems — French.

507-1 to 4 Research Problems — German.

508-1 to 4 Research Problems — Russian.

509-1 to 4 Research Problems — Spanish.

535-2 Critical Theory.

566-2 Bibliography and Research Techniques — French.

567-2 Bibliography and Research Techniques — German.

568-2 Bibliography and Research Techniques — Russian.

569-3 Bibliography and Research Techniques — Spanish.

CHINESE (Minor, Courses)

Minor

Chinese courses above 100 level.....	18
200 level: 201a,b	10
300 level	8

Courses

120-8 (4, 4) Elementary Chinese. Emphasis on development of reading, writing, speaking, and listening skills. No previous knowledge of Chinese required. Must be taken in a,b sequence. Elective Pass/Fail.

201-10 (5, 5) Intermediate Chinese. Designed to give the student a review of the Chinese language and its expansion, a reading ability in modern prose, and practice in conversation and composition. Must be taken in a,b sequence. Prerequisite: one year of college Chinese or equivalent. Elective Pass/Fail.

300-3 Chinese Literature in Translation. No knowledge of Chinese required. Lectures and collateral readings of representative Chinese literary works in English translation with special attention to the literary forms and thought from Confucius to contemporary China. Elective Pass/Fail.

306-2 to 6 (2, 2, 2) Readings in Chinese. Readings in the contemporary Chinese such as the adaptations of the writings of Tsau Yu, Lau she, Hu shih, and Lu Synn.

370-3 Contemporary China: Society and Culture. Ideology, literature, social institutions, and various cultural aspects of present-day mainland China. Lectures, films and slides, discussion. Elective Pass/Fail.

371-3 Chinese Civilization: History and Culture. Designed for the student with only a casual knowledge of China. An attempt will be made to systematically approach the main currents in Chinese history and civilization from neolithic times to the present day. The goal of the course is to provide the new student of China with a specific corpus of facts and ideas that are essential to any understanding of China's significance in the world both past and present. Elective Pass/Fail.

410-3 The Linguistic Structure of Chinese. (Same as Linguistics 411.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or introduction to linguistics. Elective Pass/Fail.

CLASSICAL STUDIES (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Classical Studies courses and courses from participating departments	36
Original Greek and Latin courses, two years of one language or one year of both	12-16
Electives: Additional Greek, Latin, and/or Classical Studies courses; courses from participating departments (limited to 12 hours): Anthropology 304; Art 307; History 310, 313; Philosophy 304, 470, 471; Political Science 404a, Religious Studies 310	20-24

Minor

Courses to be selected in consultation with adviser, from classical studies, Greek and/or Latin, Classical Studies 270, 271 recommended	15 ¹
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¹18 hours is required for State certification.

Courses

- 100-2 Greek and Latin in English.** Vocabulary building through roots, prefixes, and suffixes. Recommended for students interested in the origin of English words. No knowledge of Greek or Latin is required. Elective Pass/Fail.
- 270-3 Greek Civilization.** An introduction to the life and culture of Ancient Greece. Greek contributions to Western Civilization in literature, art, history, and philosophy. Taught in English. Complementary to 271. Elective Pass/Fail.
- 271-3 Roman Civilization.** An introduction to the life and culture of Ancient Rome. Rome's function in assimilating, transforming, and passing on the Greek literary and intellectual achievements. Rome's own contributions in the political, social, and cultural spheres. Taught in English. Complementary to 270. Elective Pass/Fail.
- 310-3 Ancient Art and Archaeology.** Survey of the physical remains of Ancient Civilizations of the Aegean and Mediterranean areas. Special attention to the artistic and architectural achievements of the Greeks and Romans. Occasionally offered overseas. Elective Pass/Fail.
- 332-3 Classical Drama.** Reading several tragedies and comedies of the Greeks and Romans both with a view to enjoying them as timeless works of art and with a view to understanding how they grew out of the societies of classical Greece and Rome. Elective Pass/Fail.
- 405-2 Greek Literature in Translation.** Reading and analysis of selected Classical Greek author(s), genre(s), theme(s), such as the role of woman, the social life of the ancient Greeks, etc. Students taking the course for graduate credit will do a critical study of one aspect. Elective Pass/Fail.
- 406-2 Latin Literature in Translation.** Reading and analysis of selected Roman author(s), genre(s), theme(s). Students taking the course for graduate credit will do a critical study of one aspect. Elective Pass/Fail.
- 441-3 Themes in Greek Tragedies and the New Testament.** (Same as Religious Studies 441.) Greek tragedies and New Testament passages from the Synoptic Gospels and the Letters of Paul showing similarities and differences in their treatment of such themes as freedom, law, love, and justice. Not for graduate credit. Prerequisite: 332 or 405 or GSC 330, and GSC 217 or Religious Studies 310, or consent of instructor. Elective Pass Fail.
- 496-2 to 8 (2 to 4, 2 to 4) Independent Study in Classical Studies Program.** (Same as Anthropology 376, History 396, Philosophy 496, Religious Studies 496.) Normally taken in course of junior and senior years to a total of at least four hours under a professor participating in Classical Studies Program (Anthropology, Classical Studies,

History, Philosophy, or Religious Studies). At end of advanced level work, student will submit a research paper. Not for graduate credit. Prerequisite: consent of instructor and classical studies section head. Elective Pass/Fail.

GREEK (Minor, Courses)

Minor

Greek courses above 100 level	18
200 level: 201a, b	6
300 and 400 levels	12

Courses

130-8 (4, 4) Elementary Classical Greek. The object of this course is to give the student a firm foundation in the grammar, vocabulary, and syntax of Ancient Greek in order to enable him/her to progress to the reading of the Greek Classics and New Testament. Must be taken in a, b sequence. No previous knowledge of Greek required. Elective Pass/Fail.

201-6 (3, 3) Intermediate Greek. Reading and interpretation of selected works by authors such as Xenophon, Plato, Homer, and the New Testament writers. Must be taken in a, b sequence. Prerequisite: 130 or equivalent. Elective Pass/Fail.

380-2 to 4 Greek Prose Authors. Reading of Greek prose. Selections from the historians (Herodotus, Thucydides), orators (Lysias, Demosthenes, etc.), philosophers (Plato, Aristotle), or epistles of the New Testament. Prerequisite: 201 or equivalent. Elective Pass/Fail.

381-3 Homeric Epic. Reading and interpretation of selections from the *Iliad* or the *Odyssey*. Homeric grammar and metrics, epic diction, the conventions of oral poetry. Prerequisite: 201 or equivalent. Elective Pass/Fail.

382-3 Greek Drama. Reading and interpretation of selections from the works of the Classical Greek dramatists: Aeschylus, Sophocles, Euripides, and Aristophanes. Stage conventions of the Attic theater. Prerequisite: 201 or equivalent. Elective Pass/Fail.

383-3 Early Greek Lyric. Reading and interpretation of poets of the Archaic Age such as Alcaeus, Sappho, and Pindar. Socio-political background, dialects, meters. Prerequisite: 201 or equivalent. Elective Pass/Fail.

415-2 to 6 (2 to 4 per semester) Readings from Greek Authors. Reading and interpretation of works in Greek not covered in other courses. Maximum of six semester hours toward program. Not for graduate credit. Prerequisite: 201 or equivalent. Elective Pass/Fail.

LATIN (Minor, Courses)

Minor

Latin courses above 100 level	18
(Latin 288 may not be included)	
200 level: 201a,b	6
300 and 400 level: 320 recommended	12

Courses

133-8 (4, 4) Elementary Latin. The object of this course is to give the student a firm foundation in the grammar, vocabulary, and syntax of Latin in order to enable him/her to progress to the reading of the Latin Classics. No previous knowledge of Latin required. Must be taken in a,b sequence. Elective Pass/Fail.

201-6 (3, 3) Intermediate Latin. Reading from authors such as Livy, Caesar, and Cicero. Must be taken in a, b sequence. Prerequisite: 133 or two years of high school Latin or equivalent. Elective Pass/Fail.

288-6 (3, 3) Latin as a Research Tool. Intensive course designed to impart grammar and vocabulary necessary for a reading knowledge of the language. Also to serve as a review for people who have had some Latin. Development of interpretive and translation skills in student's own discipline. With consent of student's department, 288b satisfies the graduate school foreign language as a research tool requirement. Open to graduates and undergraduates.

320-3 Composition. The object of this course is to understand and appreciate the

structure and style of Latin through composition. Prerequisite: 201 or equivalent. Elective Pass/Fail.

384-3 Roman Philosophy. Selections from Cicero, Lucretius, and Seneca the Younger. Recommended for students with double majors in philosophy and classics. Prerequisite: 201 or equivalent. Elective Pass/Fail.

385-3 Medieval Latin. Selected readings from Latin authors of the Middle Ages. Prerequisite: 201 or equivalent. Elective Pass/Fail.

386-3 Roman Historians. Selections from Caesar, Sallust, Livy, Tacitus, and Suetonius. Recommended for students with double majors in history and classics. Prerequisite: 201 or equivalent. Elective Pass/Fail.

387-3 Vergil. Selections from Vergil's major works, the *Aeneid*, *Eclogues*, etc. Prerequisite: 201 or equivalent. Elective Pass/Fail.

388-3 Lyric and Satire. Reading and interpretation of works by poets such as Catullus, Horace, Juvenal, and Persius. Study of either the lyric or satiric genre. Prerequisite: 201 or equivalent. Elective Pass/Fail.

389-3 Myth, Fable, and Story. Selections from works such as the *Metamorphoses* of Ovid, the *Fables* of Phaedrus, and *Satyricon* of Petronius. Prerequisite: 201 or equivalent. Elective Pass/Fail.

390-3 Roman Comedy. Reading and interpretation of selections from play(s) by Plautus and Terence. Prerequisite: 201 or equivalent. Elective Pass/Fail.

415-2 to 6 (2 or 3, 2 or 3, 2 or 3) Readings from Latin Authors. Flexible reading program of works not covered in other courses. Not for graduate credit. Prerequisite: 201 or equivalent. Elective Pass/Fail.

EAST ASIAN CIVILIZATIONS (Minor)

Minor

Courses in Chinese and Japanese to be selected,
in consultation with adviser..... 15¹

¹18 hours is required for State certification.

FRENCH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

French courses above 100 level	36
200 level: 201a,b (220 recommended; does not count toward major or minor)	8
300 level: 321 (or 320), 330, 310, 311	14
400 level: any combination of 400 level courses	14

Bachelor of Science Degree, College of Education, or
Bachelor of Arts Degree, College of Liberal Arts
(with secondary school certification)

French courses above 100 level	36
200 level: 201a,b, (220 recommended; does not count toward major or minor)	8
300 level: 320 (or 321), 330, 310, 370, (350 is also recommended)	14
400 level: 411 and 470 are recommended, plus any combination of 400 level courses	14

Minor

French courses above 100 level	18
200 level: 201a,b	8
300 level: 321, 330, 311 sequence for B.A. 320, 330, 370 se-	

quence for B.S. and those planning to teach. (350 and 411
also recommended) 10

Courses

- 103-6 (3, 3) French for Reading Knowledge.** Basic language structure and grammar with emphasis on skills, in both oral and silent reading, vocabulary acquisition, and practice in translation. May be used to satisfy language requirements. Must be taken in a,b sequence. Elective Pass/Fail.
- 123-8 (4, 4) Elementary French.** The basic skills of listening, speaking, reading, and writing. No previous knowledge of French is required. Must be taken in a,b sequence. Elective Pass/Fail.
- 190-5 Review of Elementary French.** A review course on first year level for students who have had two or more years of high school French or equivalent. Elective Pass/Fail.
- 201-8 (4, 4) Intermediate French.** Composition, oral practice, reading of modern authors; content of course will emphasize the role of French culture in world civilization. Must be taken in a,b sequence. Prerequisite: 123, or two years of high school French, or equivalent. Elective Pass/Fail.
- 203-6 (3, 3) Intermediate Reading and Translation Techniques.** Advanced grammar; reading of literary, scientific, journalistic French; emphasis on translation skills. Must be taken in a,b sequence. Prerequisite: 103 or consent of instructor. Elective Pass/Fail.
- 220-2 to 4 (2, 2) Intermediate French Conversation.** Development of oral skills on the intermediate level. Not accepted toward major requirement. Prerequisite: concurrent registration in 201 or consent of instructor. Elective Pass/Fail.
- 288-6 (3, 3) French as a Research Tool.** Reading of French texts with emphasis on grammar as a tool for reading comprehension; development of reading skills in various fields: humanities, social studies, science; development of interpretive and translation skills in student's own discipline. With consent of student's department, 288b satisfies the graduate school foreign language as a research tool requirement. Generally restricted to graduate students. Undergraduates must petition appropriate section head for admission.
- 300-2 Image of Women in French Literature.** Female characters as they are represented in French literature through the centuries; the development of a psychological and sociological point of view of women through the examination of women's roles in French literature. Conducted in English. Elective Pass/Fail.
- 310-4 Development of French Literature from the Middle Ages Through the Eighteenth Century.** Major literary movements and authors as exemplified in representative works. Elective Pass/Fail.
- 311-3 Modern French Literature.** The themes, structures, and language of some major works of poets, novelists, and playwrights from the early Romantics through the Existentialists and Robbe-Grillet. Elective Pass/Fail.
- 320-4 Advanced Language Skills.** A review of fine points of grammar and polishing of student's syntax through extensive use of translation, free composition, and conversation; readings of magazine and newspaper articles as basis for discussions and papers. Elective Pass/Fail.
- 321-4 Composition and Conversation.** Continuing study of advanced grammar and syntax with special attention to understanding the nuances of the French language. One or two novels will form the basis of papers and discussions. Elective Pass/Fail.
- 330-3 Introduction to Literary Analysis.** Examination of the basic elements of literary expression; practice of rudimentary *explications de textes*. Selections for study are taken from important works of French literature and analyses are directed toward developing the student's artistic sensibilities as well as improving their analytical skills. Elective Pass/Fail.
- 350-1 French Phonetics.** Introduction to French phonemics and phonetics involving production of French sounds and English interference. The written representation of French sounds and the teaching thereof. Prerequisite: 201 or equivalent. Elective Pass/Fail.
- 370-3 Contemporary France.** The main philosophical, political, and artistic trends within the twentieth century which have contributed to the formation of present day France. Elective Pass/Fail.
- 410-2 Critical and Artistic Writing.** Composition based on study of contemporary French for the purpose of polishing the individual student's written expression; free exercise, translation, imitation of various styles both formal and informal. opportunities for creative writing. Elective Pass/Fail.
- 411-3 Contrastive Analysis: French and English.** Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Elective Pass/Fail.

- 412-3 History of the French Language.** A survey of the phonological and morphological changes from Latin through Vulgar Latin and Old French to Modern French; study of an original Old French text, such as the *Chanson de Roland* or a romance of Chretien de Troyes. Knowledge of Latin not required. Elective Pass/Fail.
- 415-3 Literary Stylistics.** A study of the aesthetics and theory of French literary expression. Disciplined stylistic analyses of excerpts from representative works of great French authors. Appreciation of distinctive qualities of each writer's genius. Consideration is given to various stylistic methods. Elective Pass/Fail.
- 420-3 Medieval and Renaissance Literature.** Study of the origins of French literature emphasizing the *Chanson de Roland*, *Tristan*, other courtly romances, and the lyric poetry of Villon, culminating with an examination of the development of the humanistic ideas and ideals of the French Renaissance. Elective Pass/Fail.
- 430-4 Baroque and Classicism.** An in-depth examination of artistic and social writings of baroque and classical literary figures such as Corneille, Racine, Moliere, La Fontaine, Descartes, Pascal, Mme de LaFayette, La Bruyere, and La Rochefoucauld. Discussion, reports, papers. Elective Pass/Fail.
- 440-3 Literature of the Enlightenment.** Study and discussion of the novel, theater, and philosophic writing of 18th century France as literature and as expressions of the Enlightenment. Major attention given to Montesquieu, Voltaire, Diderot, and Rousseau. Elective Pass/Fail.
- 450-4 Literary Movements of the 19th Century.** Romanticism, Realism, and Naturalism in the novel and theater followed by an examination of the reaction to these movements and of the influence of symbolism. Elective Pass/Fail.
- 460-4 Studies in Literature of the 20th Century.** Examination of the major themes, forms, techniques, and style of novelists from Gide and Proust to Robbe-Grillet and dramatists from Giraudoux to Ionesco and Beckett. Elective Pass/Fail.
- 470-3 Backgrounds of French Civilization.** A study of the events, figures, and movements in France which have influenced her culture and civilization. Elective Pass/Fail.
- 475-2 to 4 Travel-Study in France.** Comprises part of the formal travel-study program offered by the department. Elective Pass/Fail.
- 490-1 to 3 Independent Study in French.** Individual exploration of some question, author, or theme of significance within the field of French literature or language.
- 501-1 to 3 Seminar on a Selected Topic or Author.**
- 520-1 to 3 Literature of the Middle Ages.**
- 530-1 to 3 Literature of the Renaissance.**
- 536-1 Teaching French at the College Level.**
- 539-1 to 3 Literature of the 17th Century.**
- 540-1 to 3 Literature of the 18th Century.**
- 550-1 to 3 Literature of the 19th Century.**
- 560-1 to 3 Literature of the 20th Century.**
- 599-1 to 6 Thesis.**

GERMAN (Major, Minor, Courses)

At least one course in the history of Germany or Central Europe is recommended for all students majoring in German.

Bachelor of Arts Degree, College of Liberal Arts

Courses above 100 level	36
200 level: 201a,b	8
300 level: 320-6, 330; 370 or 380	12
400 level: 401; at least one language course (412, 413, or 416); at least one literature course (445, 450, 465, or 485); Foreign Language 436 is recommended	12
German electives (300 or 400 level)	4

**Bachelor of Science Degree, College of Education or
Bachelor of Arts Degree, College of Liberal Arts
(with secondary school certification)**

Courses above 100 level	36
200 level: 201a,b	8
300 level: 320, 330; 370 or 380	12

400 level: 401, 412, three additional hours; Foreign Language 436	12
German electives (300 or 400 level)	4

Minor

Courses above 100 level	18
200 level: 201a,b (278 may be substituted if student plans to take 378)	8
300 level: 320 (378 may be substituted if student has taken 278)	6
German electives (300 or 400 level)	4

Courses

- 126-8 (4, 4) Elementary German.** Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of German required. Must be taken in a,b sequence. Purchase of a laboratory workbook is required. Elective Pass/Fail.
- 201-8 (4, 4) Intermediate German.** Practice in spoken and written German, combined with review of grammatical structures and reading of modern German authors, with emphasis on cross-cultural understanding. Must be taken in a,b sequence. Prerequisite: 126b or equivalent. Elective Pass/Fail.
- 278-8 (4, 4) Translation Techniques.** Thorough study of most frequent grammatical patterns with particular emphasis on written German. Contrastive study of styles through translation practice and reading of representative texts from a wide variety of fields. Must be taken in a,b sequence. Fulfills second year foreign language requirement. Prerequisite: 126b or equivalent. Elective Pass/Fail.
- 288-6 (3, 3) German as a Research Tool.** (a) Practice in recognizing and interpreting most frequent grammatical patterns and basic vocabulary necessary for reading knowledge of German; (b) concentrated training in translation of specialized literature in student's discipline. With consent of student's department, 288b satisfies the graduate school foreign language as a research tool requirement. Generally restricted to graduate students. Undergraduates must petition appropriate section head for admission.
- 300-3 The Individual and Social Change in Modern German Writing.** The selected works of such authors as Nietzsche, Marx, Freud, Mann, Kafka, Hesse, Brecht, Grass, and Weiss in English translation will provide the focal points for class discussions, regular guest lectures, and film presentations. Elective Pass/Fail.
- 302-3 Society and the Arts in 17th Century Germany.** The German Baroque period with respect to the society of that age and the literature, art, and music which it produced. Conducted in English: may count toward the German major only with instructor's approval and when special assignments in German are completed. Elective Pass/Fail.
- 320-6 (3, 3) Advanced Composition and Conversation.** Devoted to increasing the student's command of German. Intensive practice in oral and written composition. Beginning with rather controlled subject matter and progressing to a wider choice of topics. Conducted primarily in German. To be taken in sequence. Required for majors. Prerequisite: 201b or equivalent. Elective Pass/Fail.
- 330-3 Introduction to Literary Appreciation.** Practice in explication of recent literary texts in the major genres (poetry, drama, fiction) to sharpen the student's analytical skill and develop his appreciation of literature as an art form. Conducted primarily in German. Required for majors. Prerequisite: 201b or equivalent. Elective Pass/Fail.
- 370-3 German Civilization.** Intensive study of the German-language areas in Europe, concentrating on historical and social antecedents of present-day German (East and West), Austria, and Switzerland, and their effects on modern life in these areas. Conducted in English. May count toward the German major only with consent of instructor.
- 378-6 (3, 3) Translation Techniques.** Translation and reading of original German texts from the areas of social sciences, natural sciences, and humanities. Examination of pertinent reference works. Students will prepare individual translations in their own fields of specialization in regular consultation with the instructor. Must be taken in a,b sequence. Prerequisite: 278b.
- 380-3 Modern German Prose.** Introduction to outstanding German prose literature of the 19th and 20th centuries. Attention to historical and social backgrounds. Extensive reading supplemented by lectures and discussions. Conducted in German. Prerequisite: 201b or equivalent. Elective Pass/Fail.
- 401-3 Survey of German Literature Beginnings to 1780.** Readings, lectures, discussions, reports, and research projects on major German figures and movements from the Middle Ages through the Enlightenment. Prerequisite: 330. Elective Pass/Fail.
- 412-3 Contrastive Analysis: German and English.** Contrastive study of German and

English, in terms of speech sounds and grammatical structures. Designed particularly to help teachers of German diagnose and remedy the problems encountered by English-speaking students of German. Prerequisite: 320b or consent of instructor. Elective Pass/Fail.

413-3 History of the German Language. Survey of the development of German from its beginnings to the present day, with attention to dialects and "daughter languages" (including Dutch, Yiddish, Afrikaans). Elective Pass/Fail.

416-3 German Stylistics. Basic principles of *Stilkunde*, with emphasis on exercises acquainting the student with the various levels of language usage and with the essentials of effective writing in German. Prerequisite: 320b or consent of instructor. Elective Pass/Fail.

438-1 Diction for Teachers of German. Designed to correct residual pronunciation deficiencies for students planning to become teachers of German. While improving their own pronunciation, students are also made aware of the practical techniques of teaching correct German pronunciation to Americans. Elective Pass/Fail.

445-4 Age of Goethe. Intensive and extensive study of the authors, works, and movements of the period spanned by Goethe's life (1749-1832). Lectures, reports. Conducted in German. Prerequisite: 330 or consent of instructor. Elective Pass/Fail.

450-3 19th Century German Literature. German literature from the late romantics to the naturalists and impressionists. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.

465-3 German Theater Today. Plays performed in German-speaking countries at the present. The role of the theater in German culture. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.

485-2 German Lyric Poetry. Development of German lyric poetry from Klopstock and Burger to the present. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.

490-1 to 3 Independent Study in German. Project-study under supervision of German faculty. Amount of credit depending on scope of study. Prerequisite: senior standing and approval of supervising instructor.

501-2 to 4 (2, 2) Seminar in Literature, Culture, or Folklore.

502-2 to 4 (2,2) Seminar in Germanic Linguistics.

510-3 Middle High German.

512-2 Historical Germanic Dialects.

536-1 Teaching German at the College Level.

560-3 German Literature at the Turn of the 20th Century.

561-3 Modern German Novel.

586-3 Das Komische.

599-1 to 6 Thesis.

GREEK (Minor, Courses)

(SEE CLASSICAL STUDIES)

ITALIAN (Courses)

Courses

144-8 (4, 4) Elementary Italian. Study of the basic skills of listening, speaking, reading, and writing. No previous knowledge of Italian required. Must be taken in a,b sequence. Elective Pass/Fail.

201-6 (3, 3) Intermediate Italian. Composition, oral practice, reading of Italian authors. Must be taken in a,b sequence. Prerequisite: 144 or equivalent. Elective Pass/Fail.

JAPANESE (Minor, Courses)

Minor

Japanese courses above 100 level	18
200 level: 201a,b	10
300 level	8

Courses

131-8 (4, 4) Elementary Japanese. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Japanese is required. Must be taken in a,b sequence. Elective Pass/Fail.

201-10 (5, 5) Intermediate Japanese. Development of listening, speaking, reading, and writing skills on the intermediate level, with special attention to cultural readings. Must be taken in a,b sequence. Prerequisite: 131b. Elective Pass/Fail.

306-2 to 6 (2, 2, 2) Individual Readings in Japanese. Readings in modern Japanese fiction and non-literary prose. Designed to give students with some Japanese background proficiency in reading modern Japanese. Exact subject matter will depend on individual student's needs. Prerequisite: 201b.

410-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Phonology and syntax of the Standard Japanese. Special emphasis on the contrastive analysis between Japanese and English. Typological similarities and lexical borrowings between Chinese and Japanese. Prerequisite: one year of Japanese or introduction to linguistics. Elective Pass/Fail.

LATIN (Minor, Courses)

(SEE CLASSICAL STUDIES)

PORTUGUESE (Courses)

Courses

135-8 (4, 4) Elementary Portuguese. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Portuguese required. Must be taken in a,b sequence. Elective Pass/Fail.

201-6 (3, 3) Intermediate Portuguese. Continuation of grammar, composition, and oral practice. Rapid reading of modern authors. Must be taken in a,b sequence. Prerequisite: 135 or two years of high school Portuguese or equivalent. Elective Pass/Fail.

ROMANCE PHILOLOGY (Courses)

Courses

410-3 Romance Philology. Survey of phonology, morphology, and syntax changes in Romance languages in general; special attention to the developments in French and Spanish for students with majors in these fields. Elective Pass/Fail.

RUSSIAN (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Russian courses above 100 level	36
200 level: 201a,b; 220a,b	10
300 level: 306, 320, 310, 305	14
400 level: at least two literature courses	12

Bachelor of Science Degree, College of Education or
Bachelor of Arts Degree, College of Liberal Arts
(with secondary school certification)

Russian courses above 100 level	36
200 level: 201a,b; 220a,b	10
300 level: 306, 320, 310, 305	14
400 level: at least one literature course and FL 436	12

Minor

Russian courses above 100 level	18
200 level: 201a,b; 220a,b or 278a,b ¹	10-12
300 level: 306, 320 or 378 ¹ plus any combination of 300 level courses	6-8

¹278 and 378, Translation Techniques, are designed for students majoring in fields other than Russian.

Courses

136-8 (4, 4) Elementary Russian. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Russian required. Must be taken in a,b sequence. Elective Pass/Fail.

201-6 (3,3) Intermediate Russian. Continuation of the language structure and grammar with emphasis on the basic skills of listening, speaking, and writing. Introduction to readings on Russian culture. Must be taken in a,b sequence. Prerequisite: 136 or two years of high school Russian or equivalent. Elective Pass/Fail.

220-4 (2, 2) Intermediate Russian Conversation. Development of oral skills on the intermediate level. Must be taken in a,b sequence. Prerequisite: concurrent registration in 201 or consent of instructor. Elective Pass/Fail.

278-6 (3, 3) Translation Techniques. Introduction to translation of material from humanities, social sciences, and sciences, accompanied by grammatical structure; discussion of techniques, procedures, methodology, and art of translation. The course is also designed for students majoring in departments other than foreign languages and literatures. Must be taken in a,b sequence. Prerequisite: 136b or two years of high school Russian or equivalent. Elective Pass/Fail.

288-6 (3, 3) Russian as a Research Tool. Reading of Russian articles with emphasis on grammar as a tool for reading comprehension; development of reading skills in various fields: humanities, social studies, science; development of interpretive and translation skills in student's own discipline. With consent of student's department, 288b satisfies the graduate school foreign language as a research tool requirement. Generally restricted to graduate students. Undergraduates must petition appropriate section head for admission.

305-4 Advanced Conversation and Composition. Improvement of self-expression, oral and written comprehension, free composition and conversation; readings based on the history of Russia, as well as readings of magazine and newspaper articles. Prerequisite: 201 or equivalent. Elective Pass/Fail.

306-3 Intermediate Readings in Russian. Designed to improve skills in reading selections from Russian prose. Prerequisite: 201 or equivalent. Elective Pass/Fail.

310-4 Survey of Russian Literature. Historical survey of major movements, authors, and works in Russian literature. Prerequisite: 306 or approval of department. Elective Pass/Fail.

320-3 Advanced Language Skills. A review of fine points of grammar and polishing of student's syntax. Prerequisite: 201 or equivalent. Elective Pass/Fail.

350-3 Russian Phonetics. Analysis of the sounds of Russian and their manner of production; intonation and stress; levels of speech, oral practice. Prerequisite: 201b. Elective Pass/Fail.

378-3 Translation Techniques. Continuation of translating techniques by translating material from students' own discipline. This course is also designed for students majoring in fields other than Russian. Prerequisite: 201 or 278 or consent of department. Elective Pass/Fail.

411-3 Russian Stylistics. Writing style in Russian and its application to the development of skill in written expression. Prerequisite: 310 or 326 or equivalent. Elective Pass/Fail.

430-3 Business Russian. A study of the style of commercial language and its application to the development of skill in business correspondence, such as: inquiries, offers, orders, contracts, agreements, as well as documents concerning transport, insurance, and customs. Prerequisite: 201 or 278 or equivalent. Elective Pass/Fail.

465-3 Soviet Russian Literature. Major fiction writers and literary trends since 1917. Lectures, readings, and reports. Prerequisite: 310 or equivalent. Elective Pass/Fail.

470-3 Soviet Civilization. Present day political, economic, and social institutions of the Soviet Union. Readings from contemporary news media. No previous knowledge of Russian required. Elective Pass/Fail.

475-2 to 3 Travel-Study in USSR. Specialized course comprising part of the travel-study program in the Union of Soviet Socialist Republics. Prerequisite: 201 or equivalent. Elective Pass/Fail.

480-3 Russian Realism. Authors in 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports. Prerequisite: 310 or equivalent. Elective Pass/Fail.

485-3 Russian Poetry. A study of literary trends and representative works of Russian poets. Prerequisite: 310 or equivalent. Elective Pass/Fail.

490-1 to 3 Independent Study. Directed independent study in a selected area. Prerequisite: consent of the Russian section head. Elective Pass/Fail.

501-2 Seminar on a Selected Russian Author.

502-2 Seminar in Contemporary Russian Literature.

514-3 History of the Russian Language.

515-3 Russian Linguistic Structure.

540-2 Russian Literature of the 18th Century.

599-1 to 6 Thesis.

SPANISH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Spanish courses above 100 level	36
200 level: 201a,b or 275; 220a,b	9-10
300 level: 306; 310a,b and 315a,b (any 6 of the 12 hours); 320	12
400 level: 415 (Foreign Language 436 may be counted)	12
Spanish electives	2-3

Bachelor of Science Degree, College of Education or

Bachelor of Arts Degree, College of Liberal Arts

(with secondary school certification)

Spanish courses above 100 level	36
200 level: 201 a,b or 275; 220a,b	9-10
300 level: 306; 310a,b and 315a,b (any 6 of the 12 hours); 320	12
400 level: 415; Foreign Language 436	12
Spanish electives	2-3

Minor

Spanish courses above 100 level	18
200 level: 201a,b or 275	5-6
300 level: 320, 306	6
Spanish electives	6-7

Courses

140-8 (4, 4) Elementary Spanish. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Spanish required. Must be taken in a,b sequence. Elective Pass/Fail.

175-5 Intensive Elementary Spanish. An intensive course on the first-year level, with emphasis on the basic skills of listening, speaking, reading, and writing, and some introduction to the cultures of Spanish-speaking people. Prerequisite: one year of high-school Spanish or equivalent or special permission of instructor. Elective Pass/Fail.

201-6 (3, 3) Intermediate Spanish. Continuation of grammar and composition. Exercises in language laboratory. Selected readings, with special attention to the role of Hispanic culture in world civilization. Must be taken in a,b sequence. Prerequisite: 140b or 175 or two years of high-school Spanish or equivalent. Elective Pass/Fail.

220-4 (2, 2) Intermediate Spanish Conversation. Practice in spoken Spanish. Prepared and impromptu group discussions on general topics and everyday situations. Frequent short talks by students. Must be taken in a,b sequence. Prerequisite: 140b or 175 or two years of high-school Spanish or equivalent. Elective Pass/Fail.

275-5 Intensive Intermediate Spanish. A one-semester course which can be taken in lieu of the Spanish 201a,b sequence. Prerequisite: 175 or 140a,b or equivalent. Elective Pass/Fail.

288-6 (3, 3) Spanish as a Research Tool. (a) Basic grammatical structure and vocabulary necessary to a reading knowledge of the language; (b) Finalizes translation skills in the student's discipline. With consent of student's department, 288b satisfies the graduate school foreign language as a research tool requirement. Generally restricted to graduate students. Undergraduates must petition appropriate section head for admission.

300-3 The Individual and Society in Modern Hispanic Literature. Selected works in English translation of outstanding authors of Spain and Spanish America, such as Unamuno, Ortega y Gasset, Garcia Lorca, Azuela, Borges, and Cortazar, will be the focal points of in-class discussions, regular guest lectures, slides, and films. May not be counted toward a major in Spanish. Elective Pass/Fail.

305-2 Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms emphasized through classroom and language laboratory work. Highly recommended for those students with a major in Spanish. Prerequisite: 201b or 275, and 220b. Elective Pass/Fail.

306-2 Intermediate Readings in Spanish. Improves skills in reading Spanish. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.

310-6 (3, 3) Survey of Spanish Literature. The literature of Spain from its begin-

- nings in the Middle Ages to our times. Need not be taken in sequence. Prerequisite: 306. Elective Pass/Fail.
- 315-6 (3, 3) Survey of Spanish American Literature.** Spanish literature in America from the conquest to modern times. Need not be taken in sequence. Prerequisite: 306. Elective Pass/Fail.
- 320-4 Advanced Grammar and Composition.** Required of students with a major in Spanish and any student planning to teach the language. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 340-3 Applied Spanish for Human Services Workers.** Development of language skills for students who plan to become professionals in human services, and who may be working with Spanish-speaking people. Prerequisite: two years of high-school Spanish or one year of college Spanish, or special permission of the instructor. Elective Pass/Fail.
- 370-2 Spanish Civilization.** The cultural patterns and heritage of the Spanish people from earliest times to the present. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 371-2 Latin-American Civilization.** Latin-American civilization from pre-Columbian times to the present. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 375-2 Study in Spain or Latin America.** Course taught as part of the summer study-abroad program. Prerequisite: one year of college Spanish, or the equivalent. Elective Pass/Fail.
- 415-3 The Linguistic Structure of Spanish.** Phonology and grammatical structure of Spanish. Examination of the features of the principal dialects. Required of all majors. Elective Pass/Fail.
- 417-3 History of the Spanish Language.** Survey of development from the Middle Ages to the present day. Elective Pass/Fail.
- 430-3 The Golden Age: Drama.** Plays of Lope de Vega, Calderón, Tirso de Molina, and others. Elective Pass/Fail.
- 431-3 Cervantes. *Don Quijote*.** Elective Pass/Fail.
- 434-2 Colonial Literature in Spanish America.** Study of the literature of Spanish America before 1825. Elective Pass/Fail.
- 450-3 Spanish Literature of the 19th Century.** Study of significant literary works of the periods of Romanticism and Realism in Spain. Elective Pass/Fail.
- 460-5 (3, 2) Spanish Literature of the 20th Century.** (a) The novel in Spain from the Generation of 1898 to the present. (b) Poetry and drama since 1900. Elective Pass/Fail.
- 480-2 Spanish Poetry.** Representative selections from medieval, Golden Age, and 19th century Spanish poetry.
- 485-4 (2, 2) The Spanish American Short Story.** Survey of the genre in Spanish America. (a) From the beginnings through the 19th Century. (b) The 20th Century. Elective Pass/Fail.
- 486-2 Spanish American Drama.** A survey of the development of the genre from the earliest times to the present. Elective Pass/Fail.
- 487-4 (2, 2) The Spanish American Novel.** Survey of the genre in Spanish America. (a) From the beginnings to 1940. (b) From 1940 to the present. Elective Pass/Fail.
- 488-3 Spanish American Poetry from Modernism to the Present.** Survey of the genre from the late 19th century up to the present. Elective Pass/Fail.
- 490-1 to 3 Readings in Spanish.** Directed independent readings in a selected area. Prerequisite: consent of department. Elective Pass/Fail.
- 502-3 to 6 (3, 3) Seminar in Hispanic Linguistics.**
- 503-3 to 6 (3, 3) Seminar in Peninsular Spanish Literature.**
- 504-3 to 6 (3, 3) Seminar in Spanish-American Literature.**
- 510-3 Seminar in Syntax.**
- 521-3 Medieval Spanish Literature.**
- 530-2 to 4 (2, 2) Spanish Literature of the Renaissance and Golden Age.**
- 535-2 to 4 (2, 2) Spanish American Literature before 1900.**
- 540-2 to 4 (2, 2) Spanish Literature of the 18th and 19th Centuries.**
- 560-2 to 4 (2, 2) Spanish Literature of the 20th Century.**
- 565-3 to 6 (3, 3) Spanish American Literature of the 20th Century.**
- 599-1 to 6 Thesis.**

Forestry (Department, Major, Courses)

Five specializations are offered within the major in forestry. General studies requirements and a core of professional courses are similar for all specializations.

Bachelor of Science Degree, School of Agriculture

FORESTRY MAJOR—FOREST RESOURCES MANAGEMENT SPECIALIZATION

The program in forest resources management includes instruction leading to careers in forest management and production, multiple-use resource management, and the forest products industries. The specialization includes areas of study recommended by the Society of American Foresters. Emphasis is upon integrated resource management of natural and renewable resources, coordinating forest utilization methods and conservation practices, and preserving our wildlands heritage. A five-week session (Field Study) is required after the junior year to give the student practical field experience. Field study costs per student for lodging and transportation will be approximately \$110.00. Lodging costs included here are for those nights spent away from campus. Other costs for equipment and supplies will be required for field study and certain other courses.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Forestry with Specialization in</i>	
<i>Forest Resources Management</i>	85
Forestry Core 200, 201, 202, 240, 300,	
301, 331, 409	22
Biology 307, Botany 200, 201, Chemistry	
140a,b, Zoology 118	(12) ¹ + 6
Economics 214, 215; 3 hours in GSB	
political science or substitute;	
3 hours in GSB sociology or	
substitute	(9) ¹ + 3
GSD 101, 118, 153; Mathematics 140, 283	(11) ¹ + 3
GSE 101a	(1) ¹
Five week early summer field study	(6)
Junior year: Forestry 300C, 310C, 312C,	
320C, Agricultural Industries 376,	
377	10
Forestry 310, 311, 312, 320, 410, 411, 416, 430	22
Restricted Electives ²	19
<i>Total</i>	130

¹Hours included in total for General Studies requirements

²At least one course (a total of 20 hours) to be selected from each of the following areas: forest science, business administration, law and law enforcement, biological science, physical science.

FORESTRY MAJOR—OUTDOOR RECREATION RESOURCE MANAGEMENT SPECIALIZATION

The program in outdoor recreation resource management provides interdisciplinary training for management of the nation's outdoor recreation heritage. The courses offered are among those recommended by the National Recreation and Park Association. The recreation resource management student does not attend the field study session, but instead travels through selected sections of the United States on a three week tour of outdoor recreation and park facilities in August. During this period, the students pay transportation and living expenses which usually do not exceed \$200.00 per student. Other courses in this program may also require additional fees for materials and field trips.

<i>General Studies Requirements</i>	45
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Requirements for Major in Forestry with Specialization in Outdoor Recreation Resource Management 71

Forestry Core 200, 201, 202, 240, 300,
301, 331, 409 22

Biology 307, Botany 200, 201, Chemistry
140a,b, Zoology 118 (12)¹ + 6

Economics 214, 215; 3 hours in GSB
political science or substitute;
3 hours in GSB sociology or
substitute (9)¹ + 3

GSD 101, 118, 153; Mathematics 140, 283 (11)¹ + 3

Plant and Soil Science 328a,b; Political
Science 340; Design 120; Recreation
300 13

Forestry 311, 320, 405, 420, 421, 422T 15

Restricted Electives² 9

Electives 4

Total 120

¹Hours included in total for General Studies requirements
²To be selected from social and managerial sciences, planning and design, wildlife management, or park arboriculture, or from a combination of these areas.

FORESTRY MAJOR—URBAN FOREST MANAGEMENT SPECIALIZATION

Students in the urban forest management specialization are offered educational and technical learning opportunities relevant to the understanding and management of trees and forests in an urbanizing environment. Strong emphasis is placed on a multidisciplinary approach to urban problem solving. Emphasis is provided in the business, ecological, and managerial areas. Internships, practical, and summer work assignments with urban forestry organizations provide valuable field experiences.

General Studies Requirements 45

Requirements for Major in Forestry with Specialization in Urban Forest Management 72

Forestry Core 200, 201, 202, 240, 300,
301, 331, 409 22

Biology 307, Botany 200, 201, Chemistry
140a,b, Zoology 118 (12)¹ + 6

Economics 214, 215; 3 hours in GSB
political science or substitute;
3 hours in GSB sociology or
substitute (9)¹ + 3

GSD 101, 118, 153; Mathematics 140 (11)¹

GSE 101a, 106 (2)¹

Accounting 210, Finance 271,
Administrative Sciences 301, 304 12

Plant and Soil Science 328, 422, 432 11

Recreation 300, Community Development 401 6

Forestry 340, 420, 421, 440 12

Electives 3

Total 120

¹Hours included in total for General Studies requirements.

FORESTRY MAJOR—FOREST ECOLOGY SPECIALIZATION

The specialization in forest ecology provides training in the assessment of the environmental impact of resource development of forest resources and of forest manipulation on environmental quality. Students in this specialty do not attend the field study session but complete a special field study course during the summer after the junior year. During this period, case studies are utilized to illustrate the preparation of environmental impact statements. Students pay approximately \$25.00 each for transportation charges incurred during the field course.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Forestry with Specialization</i>	
<i>in Forest Ecology</i>	75
Forestry Core 200, 201, 202, 240, 300, 301, 331, 409	22
Biology 307; Botany 200, 201 Chemistry 140a,b,	
Zoology 118	(12) ¹ + 6
Economics 214, 215; 3 hours in GSB political science or substitute;	
3 hours in GSB sociology or substitute	(9) ¹ + 3
GSD 101, 118, 153; Mathematics 140, 283	(11) ¹ + 3
Botany 320, 443; Agriculture 333	10
Forestry 310, 311, 312, 405, 410, 430,	
451, 452, 453	22
Forestry and related elective	9
<i>Total</i>	120

¹Hours included in total for General Studies requirements.

FORESTRY MAJOR—FOREST SCIENCE SPECIALIZATION

The forest science specialization is available for the student desiring to later on enter a graduate program and concentrate in a given area of knowledge. The program provides maximum flexibility to enable the student and his or her adviser to construct an individualized program within the student's field of study. The program of study may be selected from any subject area within the competence of the Department of Forestry faculty. The student must maintain a minimum 3.00 grade point average to remain in the forest science specialization.

Available to the Department of Forestry for teaching and research in addition to resources present on campus are the following: the Crab Orchard National Wildlife Refuge; the Shawnee National Forest; a number of state parks and conservation areas; the Kaskaskia Experimental Forest, and Southern Illinois University at Carbondale outdoor laboratories together comprising over a million acres of forest land, all in the vicinity of the University. Also accessible for forest products utilization teaching and research is a wood products plant located near the campus. Forest scientists of the U.S. Forest Service (Forestry Sciences Laboratory) and the staff of the Crab Orchard National Wildlife Refuge are affiliated with the Department of Forestry, and are authorized to participate in the educational activities of the department.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Forestry with Specialization</i>	
<i>in Forest Science</i>	75
Forestry Core 200, 201, 202, 240, 300,	
301, 331, 409	22

Forestry and related electives ¹	53
Total	120

¹The student and an academic adviser will select courses designed to meet the needs and objectives for the area of specialty selected. This specialization is intended for student preparing for advanced study.

Courses

200-1 Introduction to Forestry. Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Required field trips cost \$15.00. Elective Pass/Fail.

201-3 Trees and Forests: Classification and Silvics. A study of tree classification and ecology; discussion of forest classification principles and major forest associations in North America; introduction to environmental factors controlling forest composition and distribution. Forestry majors must take 202 concurrently. Extra costs total \$20.00 unless paid in 202. Prerequisite: Botany 200 and 201.

202-1 Trees and Forests Laboratory. Field and laboratory identification of trees and shrubs using leaf, twig, fruit, and bark characteristics, and forest type classification. Two Saturday field trips required. Extra costs total \$20.00 unless paid in 201. Prerequisite: Botany 200 and 201.

240-4 Soil Science. (See Plant and Soil Science 240.)

300-3 Forest Resources Measurements. Introductory measurement, statistical and data processing concepts; volume, growth and yield of forest products; methods of sampling forest resources. Field trips. Prerequisite: Mathematics 140 and 283.

300C-1 Forest Resources Measurements Field Studies. Methods of determining volume and quality of forest products, forest resource inventory procedures, growth and productivity studies. Field trips. Prerequisite: 300.

301-3 Social Influences on Forestry. Study of, and practice in, methods used for effecting social change in forestry and allied natural resource fields. Case studies, readings, and actual practice in techniques are used to develop an understanding of historical and current trends. Prerequisite: a course in sociology and a course in political science.

310-2 Practices of Silviculture. Detailed study of classical concepts and recently developed techniques utilized in silvicultural treatment of forests. Major emphasis to be placed upon establishments, thinning, timber stand improvement, and regeneration of forest. Prerequisite: 331.

310C-2 Silviculture Field Studies. Field experience for the student in the various facets of silviculture including planting, thinning, harvesting, timber stand improvement and site-growth relationships. Offered only at summer camp. Costs for students are given in forestry description. Prerequisite: 331 and 310.

311-3 Resources Photogrammetry. The science and art of obtaining reliable measurement by means of photographs, detection of disease, insects and fire invasion by remote sensors; and delineation of resources boundaries through interpretation.

312-3 Protection of the Forest Environment. The impact, recognition, and control of destructive enemies within the forest environment. Includes fire, insects, disease, pollution, and climatic factors. Prerequisite: 331, Botany 200, Zoology 118, or consent of instructor.

312C-2 Forestry Protection Field Studies. The prevention and suppression of forest fires, the recognition and control of insect and disease organisms and other destructive agents in the forest. Summer camp only. Cost per student given in the Forestry description. Requires additional expenses of approximately \$20.00 per student. Prerequisite: for forestry resource management option only-331, 202, 312.

313-3 Harvesting Forest Crops. Emphasis is given to lumber sale layouts, sale contracts, and harvest engineering methods. Consideration is given to the environmental impacts of harvesting. Additional cost: \$25. Prerequisite: 310 and 312.

320-2 Recreation in Wildlands Environments. Trends in recreational use of wild-land environments with emphasis on state and federal parks and forests. Introductory concepts in recreation management, planning, and interpretation.

320C-1 Forest and Wildlands Recreation Field Studies. Recreational use of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and development. Offered only at spring camp (costs per student are given in the Forestry description). Requires supplemental purchases of approximately \$2 per student.

331-3 Forest Ecosystems. An analysis and integration of tree growth and of forest structure, material and energy flow, and classification in relation to climatic and edaphic factors to provide an ecological basis for management of forest ecosystems. Prerequisite: 201, 202, 240, Biology 307.

340-3 Urban Forestry Practice. Evaluation of urban forest maintenance, city and county forest preserves, and municipal, watersheds. Emphasis on urban environment and tree species adapted to it. Required field trips. Additional cost \$20.00. Prerequisite: 201 or knowledge of plant materials.

341-3 Forestry Practices. The fundamentals of integrated resource management of timberlands. Management systems, tree and stand measurements. Planting and harvesting methods, multiple-use aspects of forest lands. Field trips. Emphasis on small forest ownerships. Not for graduation credit in forest resources management option.

350-2 Wood as a Raw Material. Structure, identification, and properties of wood. Important species and the significance of wood use to the environment.

381-1 Forestry Seminar. Discussion of problems in or related to forestry.

391-1 to 4 Special Problems in Forest Resources. Independent research sufficiently important to require three hours per week of productive work for each hour of credit. Prerequisite: junior standing and consent of department chairman.

405-2 Forest Management for Wildlife. Interrelations between forest practices and wildlife populations. Emphasis is on habitat requirements of different wildlife species and ways to manipulate the forest to improve wildlife habitats. Prerequisite: forestry major, or consent of instructor.

409-4 Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests, particularly in the public sector. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative methods to evaluate resource use alternatives. Case studies. Prerequisite: 410.

410-3 Forest Resources Administration and Policy. Nature of administrative organizations and influences on behavior of organization members. Society influences causing changes in forestry related organizations. Policy formation and implementation, including roles of special interest groups. Prerequisite: 301.

411-3 Forest Resources Economics. Introduction to forest economics: Application of micro- and macro-economics principles to forest timber and non-timber production; capital theory; benefit-cost analysis; and economics of conservation. Prerequisite: six hours of micro- and macro-economic principles.

412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Prerequisite: senior standing.

416-3 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Field trips and supplemental purchases approximately \$25.00 per student. Prerequisite: summer camp or consent of instructor.

417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determination of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: 411 or consent of instructor.

418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: 411 or consent of instructor.

420-3 Park and Wildlands Management. The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Requires supplemental purchases of approximately \$5.00 per student. Prerequisite: 320C or 422T.

421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on large regional parks. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: 350, 450 or consent of instructor.

422T-2 Park and Wildlands Management — Field Trip. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States. Course requires a field trip and supplemental purchases costing approximately \$110.00 per student. Prerequisite: 320 or 320C and consent of instructor.

423-3 Environmental Interpretation. (See Agriculture 423.)

430-3 Wildland Watershed Management. Fundamentals of hydrology and water management for wildland watersheds. Emphasis is placed upon the effects of forest management alternatives on the quality, quantity, and timing of water yield. Prerequisite: 331.

431-3 Regional Silviculture. Designed to evaluate the various silvicultural practices as they are commonly employed in various regions of the United States. Offered alternate years. Prerequisite: 310C.

- 440-3 Urban Forestry Management.** Urban forestry research programs, shade tree commissions and ordinances, community forestry planning; state, federal, and international programs case history studies and preparation of a model municipal forestry plan. Required field trip additional costs, \$20.00. Prerequisite: 340.
- 451-2 Natural Resources Inventory.** Theory and practical problems in biometrics to obtain estimates of natural resource populations. Use of computers and other advanced techniques. Prerequisite: 300 or consent of instructor.
- 452-2 Forest Soils.** Land forms, their geology, and the soils developed on them; the chemical, physical, and biological properties of forest soils; soil classification, and field interpretation as related to forest resources management. Prerequisite: 240 or Plant and Soil Science 240.
- 453-2 Environmental Impact Assessment in Forestry.** Methods of assessing the environmental impact of land-use systems on forest resources and of assessing the impact of forest management systems of environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Field trip cost, \$20. Prerequisite: 300, 310, 313, 312, 430, or consent of instructor.
- 460-2 Forest Industries.** Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.
- 492-1 to 4 Special Studies for Honor Students.** Research and individual problems in forestry. Prerequisite: consent of chairman and 3.0 minimum grade point average.
- 494-1 to 6 Practicum.** Supervised practicum experience in a professional setting. Emphasis on administration, supervision, teaching, and program leadership in community, school, park and forest, institution, and other recreation settings. Prerequisite: consent of instructor.
- 500-2 Principles of Research.**
- 501-1 Graduate Seminar.**
- 511-2 Advanced Forest Resources Economics.**
- 512-2 Tree Selection and Breeding.**
- 516-2 Advanced Forest Management.**
- 520-2 Advanced Park Planning.**
- 521-2 Recreation Behavior in Wildlands Environments.**
- 530-2 Forest Site Evaluation.**
- 531-2 Biological Productivity of Forests.**
- 588-1 to 6 International Graduate Studies.**
- 590-1 to 4 Readings in Forest Resources.**
- 593-1 to 4 Individual Research.**
- 599-1 to 6 Thesis.**

General Science (Major)

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in General Science</i>	51 ¹
Core Curriculum	22
Botany 200, 201, 204, 205	(3) + 5
Zoology 120a,b	8
Chemistry 222a,b	(4) + 4
Physics 203a,b, 253a,b	(3) + 5
One of the following fields	8
Health, Earth Science, or Environmental Science	
Secondary Education 487	2
Mathematics 111	(4) + 1
Approved general science electives	18
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Total</i>	120

¹Although hours shown in parentheses are required for the major, they also will count toward 45 hour requirement in General Studies.

Geography (Department, Major, Courses)

The Department of Geography offers three programs to undergraduate students. The Bachelor of Arts and the Bachelor of Science are offered through the College of Liberal Arts and the Bachelor of Science degree is offered through the College of Education. A minor is required of all geography majors and should be arranged in consultation with the department. Junior college transfer students interested in geography are encouraged to visit the department to determine possibilities for waivers, proficiencies, and transfer credit substitution.

Honors in geography is a special three semester program available to majors with an overall grade point average of 3.00 or better. During the junior year, the honors candidate should apply. Eligible students must obtain departmental consent prior to initiation of this program.

The core of training for majors involves 300- and 400-level courses. Geography 300, the first course in a major's program, gives a basic foundation in the topics and fields of research within geography. It acquaints the students with the viewpoints and methods of geography, with the concepts and theories in geography, and with the basic techniques and tools used by the geographer, namely maps and quantitative methods. In addition to Geography 300, at least three 300-level and three 400-level courses are required. Several 400-level courses are offered in physical environment systems, resource management systems, urban and regional planning, geographic techniques, and special tutorials. These tutorials are offered to allow the student an opportunity to work closely with the faculty during the senior year. Graduates from the department enter several categories of employment: teaching (35%), planning and government (15%), business and industry (15%), graduate study (20%), military (5%), and miscellaneous (10%).

The minor for geography majors may be formed in either of two ways. It may be a regular minor from another department or it may be an interdisciplinary minor created in consultation with the department.

Students minoring in geography must take Geography 300 or GSB 103, three 300-level courses and one 400-level course. Geography 300 has been approved as a substitute for GSB 103 for the General Studies requirement. Social studies students must take Geography 300 or GSB 103 and complete their concentration with electives from geography.

Bachelor of Arts or Bachelor of Science Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	15
<i>Requirements for Major in Geography</i>	30-32
Geography 300 or GSB 103	3
Any three: Geography 302, 304, 306, 310, or one regional course	8-9
Any three: Geography 422, 424, 425, 432A, 432B, 470a	11-12
Electives in Geography selected with the approval of the department	6-8
<i>Minor (or selection of courses complimentary to major)</i>	15
(May be satisfied by College of Liberal Arts requirements)	
<i>Electives</i>	13-15
<i>Total</i>	120

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Geography</i>	32-34
Geography 300 (or GSB 103) and 443	6
Any three: 302, 304, 306, 310, or one regional course	8-9
Any three: 422, 424, 425, 432A, 432B, 470a	11-12
Electives in Geography — GSA 330, Geography 331, 406, 410, 416, 421, 430, 433, 438, 439, 440, 471, 490	5-7
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Minor (or selection of courses complimentary to major)</i>	15 ¹
<i>Electives</i>	4
<i>Total</i>	120

¹Students who intend the use of the minor for teacher certification purposes must complete a minimum of 18 semester hours in the minor.

Minor

College of Liberal Arts

A minor in geography requires	15-16
Geography 300 or GSB 103	3
Any three: 302, 304, 306, 310, or one regional course	8-9
One from 422, 424, 425, 432A, 432B, 470a	3-4

College of Education

A minor in geography requires	18-20
Geography 300 or GSB 103	3
Any two: 302, 304, 306, 310, or one regional course	5-6
Two from 422, 424, 425, 432A, 432B, 470a	7-8
Geography 443	3

Courses

- 202-2 Contemporary World Geography: Selected Regions and Places.** A geographic study of selected regions and places of particular or current interest in the world.
- 212-2 Maps and Mapping.** History of cartography; properties, uses, and sources of maps and air photos.
- 224-3 Geography of Natural Hazards.** Damage from natural hazards in the United States is on the rise while loss-of-life has been declining. Losses from earthquakes, floods, hurricanes, tornadoes, drought, hail and urban snow in the United States are reviewed. The range of alternatives to cope with natural hazards are appraised; and special attention is given to problems characteristic of all natural hazards — warnings, relief and rehabilitation, insurance, and land-use management.
- 258-1 to 5 Work Experience in Geography.** Work experience in tasks specifically related to the field of geography such as are found in cartography and map work, climatology, and resource management. Prerequisite: geography major and consent of department. Mandatory Pass/Fail.
- 300-3 Introduction to Geography.** The nature of geography, the kinds of problems which it investigates, the methods which it uses. Preparation for systematic geography.
- 302-3 Physical Geography.** A study of the earth's physical surface, world distribution patterns of the physical elements, their relationship to each other and their importance to man. Field trip and laboratory work. Prerequisite: 300 or consent. Elective Pass/Fail.
- 304-3 Economic Geography.** Study of the spatial distribution and interaction of

economic activities. Introduction to locational theory. Prerequisite: 300 or consent. Elective Pass/Fail.

306-3 Cultural Geography. An overview of the geographic viewpoint in the study of the human occupancy of the earth. Aspects of population, settlement, and political geography are treated, and a generalized survey of major world cultural areas is used to integrate course elements. Prerequisite: 300 or consent. Elective Pass/Fail.

307-3 Plants, Animals, and Civilization. Concerned with the development of some understanding of the importance of key economic plants and animals, their natural and managed environments, their utilization, and their contributions in the shaping of past and present civilization. Attention will be given to broad concepts involved in plant and animal domestication, and the development of man's dependence upon plants and animals as a source of materials that serve as food and clothing.

310-3 Cartography. Properties of maps and air photos, their use and sources; map symbols, map projections and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Prerequisite: 300 or consent. Elective Pass/Fail.

331-2 Man's Modification of Climate. Introduces the basic concepts in the functioning of the climatic environment at the earth's surfaces and develops a holistic view of the way parts and processes of the earth interact through exchanges of energy and water with reference to questions of the human use of the earth. Elective Pass/Fail.

360-3 Geography of Illinois. Introduces and explores some of the spatial elements of the physical and human geography of the State of Illinois through a comparative analysis of the urban and rural lifespaces. Specific geographic issues and problems are selected by the students for group discussion and analysis. Elective Pass/Fail.

362-2 Regional Geography of Europe. Introduces present-day Europe. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

363-2 Regional Geography of Mediterranean Lands and Southwestern Asia. Geography of northern Africa and the near East in a systematic context. Settlement and land use patterns, cultural history and diversity, and contemporary problems. Elective Pass/Fail.

364-2 Regional Geography: Soviet World. Introduction to and survey of the Soviet world and investigation of problems and issues affecting the region. Elective Pass/Fail.

365-2 Regional Geography of Subsaharan Africa. (Same as Black American Studies 380.) Analysis and explanation of emerging spatial pattern of socio-economic development in Africa as most meaningful to the geographer in assessing the continent's transition from traditional to modern political, social, and economic systems. Elective Pass/Fail.

366-2 Regional Geography: Eastern and Southern Asia. Introduces present-day Eastern and Southern Asia. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

367-2 Regional Geography of South America. Analysis of the landscapes of tropical and Andean South America. Historical background of current patterns and problems. Present and future development problems in terms of natural resources, economic, and agriculture systems, and ethnic and settlement patterns. Elective Pass/Fail.

368-2 Regional Geography of Middle America. Interrelationships of groups of humans and their physical and social environments in Middle America. Emphasizes historical depth of perspective. Clarifies the origin of problems in the region. Elective Pass/Fail.

369-2 Regional Geography of Oceania. Introduces present day Oceania. Survey of the area and investigation of specific problems and issues affecting the region. Elective Pass/Fail.

406-2 Advanced Cultural Geography. Deals with one or more of the following: population, settlement, ethnic characteristics, political factors; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 306 or consent. Elective Pass/Fail.

410-4 Techniques in Geography. Geographic applications of basic and advanced statistical and mathematical techniques, including basic descriptive statistics, hypothesis testing, regression and correlation, analysis of variance, and nonparametric statistics. Special emphasis on areal measures: nearest neighbor analysis, cluster analysis, etc. Prerequisite: 300 or consent. Elective Pass/Fail.

416-4 Cartography and Computer Mapping. Introduction and practice in the techniques of mapmaking and problems in map reproduction. Laboratory. Prerequisite: 310 or consent. Elective Pass/Fail.

421-2 Urban Geography. Examination of extracity relationships — theory and structure; intra-city relationships — theory and structure, and selected urban problems. Offered once annually. Prerequisite: 300 or consent. Elective Pass/Fail.

422-4 Economics in Geography and Planning. (Same as Economics 425.) Concepts, symbols, language, theory, and elementary mathematics of economics and geography. Individual's preferences, production functions, the firm, markets, optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: 300 or consent of instructor. Elective Pass/Fail.

424-4 Natural Resources Planning. Literature in resource management problems. Emphasis on theory, methods of measurement and evaluation concerning implications of public policy. The role of resources in economic development and regional planning, water and related land resource problems, and environmental quality from a multidisciplinary perspective. Prerequisite: 304 or consent. Elective Pass/Fail.

425-4 Water Resource Planning Simulation. A review of water resource planning theory and practice from a physical, technological, economic, social, and geographical viewpoint. Students design a comprehensive water resource plan including flood control, water supply, water quality, and recreation for a city of 175,000 population. This plan is "Played" against a 50-year trace of hydrologic parameters in a computer simulation. Prerequisite: 424 or consent. Elective Pass/Fail.

430-3 Theory of Environment. Exploration of the hypothesis that the physical environment works on local hydrology, soils, and natural vegetation, agriculture, and landforms, through energy and moisture exchanges. Emphasis on model building for comparison of subsystems, to rate effectiveness of contrasting environments, and to project these consequences to environmental management questions. Prerequisite: 302 or consent. Elective Pass/Fail.

431-2 Medical Geography. Deals with the distribution of diseases and attempts to use the operational concepts of human ecology as a point of departure. A brief historical outline and an introduction to public health, epidemiology, and related fields is provided. Problems of communicable and chronic diseases, nutritional deficiency, geochemical relations, biometeorology and medical climatology, environmental pollution, and seasonal disease calendars are emphasized. Taught by Department of Geography staff. Prerequisite: 300 or consent. Elective Pass/Fail.

432A-4 Urban Climatology of the Environment. Energy and moisture budget concepts are developed from basic principles. Microclimatic data, instrumentation and applications stress urban examples. Models of climatic effects and modeling of Man's effects concern city climates mainly. Prerequisite: 302 or 430 or consent. Elective Pass/Fail.

432B-4 Hydrologic Climatology. Microclimatic factors which affect the hydrologic events of various climatic regions are treated extensively. Methods of estimating geographic variations in hydrologic relations to climatic and microclimate especially evapotranspiration, are compared and evaluated. Consequences of alternative land uses on climate and hydrology are considered regionally. Prerequisite: 302 or 430 or consent. Elective Pass/Fail.

433-3 Advanced Physical Geography. Topics may include landforms, climate, soil, or water. Varies with the interest of the instructor. Prerequisite: 302 or consent. Elective Pass/Fail.

438-3 Applied Meteorology. (Same as Geology 438.) Analysis of meteorological patterns approached through study of several case histories. Evaluation of meteorological data, air mass and frontal analysis, development of weather forecasts, study of meteorological instruments, clouds, and precipitation patterns. Prerequisite: GSA 330 or consent of instructor. Elective Pass/Fail.

439-3 Climatic Change—Inevitable and Inadvertent. The geologic time-scale perspective of major natural events that have affected the theoretical steady-state climate, and factors in contemporary societal practices that have brought about inadvertent climatic modification. An assessment of the means and extremes of parameter values in the geologic time-scale perspective studied will be compared with the documented and present-day climatic parameter means and extremes. Approaches to prognoses for the Earth's future climatic state will be made. Elective Pass/Fail.

440-2 Tutorial in Geography. Prerequisite: geography major, senior standing.

443-3 Teaching of Geography. Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Prerequisite: 300. Elective Pass/Fail.

470-9 (3, 2, 2 to 4) Urban Planning. (Same as Political Science 447.) (a) Planning concepts and methods. (b) Field problems. (c) Planning and public administration internship. Prerequisite: consent of department. Elective Pass/Fail.

471-2 Regional Planning. Examination of the viewpoint, methods, and techniques of regional planning. Prerequisite: 300 or consent. Elective Pass/Fail.

487-6 (1, 2, 3) Honors in Geography. (a) Honors tutorial; (b) Honors reading; (c) Honors supervised research. Must be spread over the last two years of the undergraduate's career. May be taken in either a,b,c or b,a,c sequence. Prerequisite: consent of department. Elective Pass/Fail.

490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Prerequisite: geography major, advanced standing. Elective Pass/Fail.

- 500-3 Principles of Research.
- 510-4 Multivariate Techniques in Geography.
- 511-2 Philosophy of Geography.
- 514-2 College Teaching of Geography.
- 520-2 to 4 Seminar in Physical Geography.
- 521-2 to 4 Seminar in Economic Geography.
- 522-4 Economics in Geography and Planning II.
- 524-2 to 4 Seminar in Cultural Geography.
- 527-2 to 4 Seminar in Urban and Regional Planning.
- 591-2 to 4 Independent Studies in Geography.
- 593A-2 to 24 (2 to 6 per semester) Research in Physical Geography.
- 593B-2 to 24 (2 to 6 per semester) Research in Economic Geography.
- 593C-2 to 24 (2 to 6 per semester) Research in Regional Geography.
- 593D-2 to 24 (2 to 6 per semester) Research in Cultural Geography.
- 596-2 to 4 Field Course.
- 599-2 to 6 Thesis.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

Geology (Department, Major, Courses)

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology but is a flexible program, permitting a student to combine training in geology with courses in other areas of interest, such as peripheral sciences, management, or pre-law. A minor is optional. Having obtained a Bachelor of Arts degree, a student may continue his education toward a Master of Science degree in geology, although it may be necessary to absolve deficiencies in physics and mathematics.

The Bachelor of Science degree requires a major in geology and courses in biology, chemistry, mathematics, physics, and science electives. This degree will ordinarily be pursued by students desiring to do graduate work in geology or to become professional geologists.

Bachelor of Arts Degree, College of Science

General Studies Requirements	45 ¹
Supplementary College of Science Requirements	5
English Composition	(3)
Speech	(2)
Writing Course	(2)
Mathematics 110a,b or 111	(4)+1
Foreign Languages	(4) + 4
Biological Sciences (Not General Studies)	(6) ³
Requirements for Major in Geology	40-45
Geology 220, 221, 302, 310, 315, 325, 374, 425, and 450 or 454 ⁴	29-33
Chemistry 222 or 224 and 225	7-8 ²
Physics 203a, 253a, or 204a, 254a, or 205a, 255a	4 ²
Electives	25-30
Total	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

²Courses will also meet the physical science requirement for the College of Science.

³If courses which have been approved as General Studies substitutes are taken, they will count as a part of the 45 hours in General Studies.

⁴The summer field geology course, Geology 454, should be taken between the junior and senior years.

Bachelor of Science Degree, College of Science

General Studies Requirements	45 ¹
Supplementary College of Science Requirements	5
English Composition	(3)
Speech	(2)
Writing Course	(2)
Mathematics 110a,b or 111	(4) + 1
Foreign Languages	(4) + 4
Biological Sciences (Not General Studies)	(6) ⁴
Requirements for Major in Geology	66-67
Geology 220, 221, 302, 310, 315, 325, 374, 415, 425, 454 ³	36
Geology electives	5
Mathematics 150	4
Chemistry 222 or 224, 225	7-8 ²
Physics 203a,b, 253a,b, or 204a,b, 254a,b, or 205a,b, 255a,b	8 ²
Electives in supporting sciences or technology (to be approved by geology undergraduate adviser)	6
Electives	3-4
Total	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²Courses will also meet the physical science requirement for the College of Science.
³The summer field geology course, Geology 454, should be taken between the junior and senior years.
⁴If courses which have been approved as General Studies substitutes are taken, they will count as a part of the 45 hours in General Studies.

Minor

A minor consists of 16 hours, determined by consultation with the geology adviser.

Courses

Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip fee of \$2 to \$7.

- 220-3 Physical Geology.** Introduction to the structure and composition of the earth, the concept of geologic time, and the physical and chemical processes that operate to modify the earth and its surface. Speculations concerning the origin and early development of the earth. Two lectures and one three hour laboratory. One Saturday field trip required. Prerequisite: high school or college chemistry. Elective Pass/Fail.
- 221-3 Historical Geology.** Principles and methods of interpreting Earth's history. General view and selected examples of Earth's physical, biological, and chemical history. Laboratory and field trips required. Prerequisite: 220; a biology course recommended. Elective Pass/Fail.
- 302-4 Fundamentals of Structural Geology I.** An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory and two Saturday field trips required. Prerequisite: 220, Mathematics 110. Recommended: Physics 203, 204, or 205 or concurrent enrollment. Elective Pass/Fail.
- 310-4 Mineralogy.** Rudiments of crystal structure, morphology and symmetry. Introduction to crystal chemistry. Study of the properties, chemistry, occurrence and

identification of common rock-forming and economically important minerals. Lecture-laboratory. Prerequisite: 220, Chemistry 222, Elective Pass/Fail.

315-3 Igneous and Metamorphic Petrology. The characteristics and classification of igneous and metamorphic rocks, their origin and geologic distribution. Laboratory. Field trip required. Prerequisite: 310; 415 recommended. Elective Pass/Fail.

325-3 Stratigraphy and Sedimentation. The characteristic features of sedimentary rocks and the physical and chemical processes responsible for their origin and diagenesis. The classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory and field trips required. Prerequisite: 220, 221, 310; 415 recommended. Elective Pass/Fail.

330-3 Geology of Illinois. For non-majors and beginners. The physical nature of Illinois, its landforms, rocks and soil, geologic history of its formation, active processes and hazards today. Resource development, land and water use and management. Laboratory provides for individual interests in collecting, photography, ecology, planning, etc. Elective Pass/Fail.

374-3 Geomorphology. Study of the erosional and depositional processes operating at the earth's surface and the landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220. Elective Pass/Fail.

400-2 Earth Science Seminar. Designed to integrate the basic concepts of earth science gained through courses taken in several departments. Focus on one or more local problems such as development and management of Cedar Creek Reservoir. Prerequisite: GSA 110, upper class standing or consent of department. Elective Pass/Fail.

412-2 Advanced Mineralogy. A continuation of 310 with emphasis on crystallography, crystal chemistry, crystal structure, and stereographic projection. Prerequisite: 310. Elective Pass/Fail.

414-1 to 2 Paleobotany. (See Botany 414.) Elective Pass/Fail.

415-3 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, laboratory. Prerequisite: 310, Physics 203b, 204b, or 205b. Elective Pass/Fail.

416-3 X-ray Crystallography. (Same as Chemistry 416.) Introduction to the study, measurement, and identification of unknown crystalline materials by X-ray diffraction techniques (especially the Debye-Scherrer methods). Upon request, non-geology majors may work with unknowns from their own fields of study. Prerequisite: 310, Mathematics 150 or consent. Elective Pass/Fail.

418-3 Low Temperature Geochemistry. The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: 310, Chemistry 222 or equivalent. Elective Pass/Fail.

419-4 Ore Deposits. The geological and other factors that govern the exploration for and occurrence of metalliferous mineral deposits. Study of the geological settings of the major types of ore deposits. Lecture, laboratories, and field trips. Prerequisite: 302, 315. Elective Pass/Fail.

420-3 Petroleum Geology. The geological occurrence of petroleum including origin, migration, and accumulation; a survey of exploration methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: 221, 302. Elective Pass/Fail.

425-4 Invertebrate Paleontology. Principles of paleontology and a survey of the important invertebrate phyla and their fossil representatives. Laboratory. Field trips required. Prerequisite: 221, a biology course. Elective Pass/Fail.

428-3 Paleoecology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: 425, 325 or concurrent enrollment. Elective Pass/Fail.

430-3 Physiography of North America. A regional study of North American landforms and their origins. The approach designed to give interaction among students, stimulus in organization and presentation of material and library competence. Plan a trip for optimum view of North American physiography. Prerequisite: 220. Elective Pass/Fail.

435-3 Hydrogeology. A problem-solving oriented course which covers the analysis and interpretation of the distribution, origin, movement, and chemistry of ground water. Laboratory. Prerequisite: 220, Mathematics 250. Elective Pass/Fail.

436-4 Elementary Exploration Geophysics. Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of data. Field trips required. Prerequisite: 220, Mathematics 150. Elective Pass/Fail.

- 438-3 Applied Meteorology.** (See Geography 438.) Elective Pass/Fail.
- 440-1 to 4 Advanced Topics in the Geological Sciences.** Individual study or research or advanced studies in various topics. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.
- 449-1 to 2 Internship.** Credit for professional experience in the geological sciences. Arrangements made with chairman. Prerequisite: advanced standing. Elective Pass/Fail.
- 450-2 Introduction to Field Geology.** Introduction to field techniques, principles of geologic mapping and map interpretation. Field trip fee \$5.00. Prerequisite: 302, 315 or concurrent enrollment. Elective Pass/Fail.
- 454-6 Field Geology.** Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Transportation fee \$80.00, supplies \$6.00. Prerequisite: 302, 315; 450 recommended. Elective Pass/Fail.
- 455-3 Engineering Geology.** (Same as Engineering 455.) An examination of problems posed by geology in the design, construction, and maintenance of engineering works. Topics studied include ground water, land subsidence, earthquakes, and rock and soil mechanics. Two term papers and a field trip required. Prerequisite: 220 or consent. Elective Pass/Fail.
- 460-3 Geological Data Processing.** Computer applications to geological problems including the processing and programming of data and the interpretation and evaluation of results. Lecture, laboratory. Prerequisite: Engineering 222 or Computer Science 202. Elective Pass/Fail.
- 465-2 Evolution of Orogenic Belts.** A combination of lectures and seminars in which the structural development of specific orogenic belts is investigated in detail. Prerequisite: 302 or equivalent, 466 or consent. Elective Pass/Fail.
- 466-3 Global Tectonics.** An introduction to the concepts of plate tectonics, earthquake seismology, geomagnetism, terrestrial heat flow and their application to regional geological evolution. Lecture and assigned problems only. Prerequisite: 302 or equivalent. Elective Pass/Fail.
- 470-3 Earth Science for Teachers.** Designed to help each teacher improve knowledge and skills of the earth sciences, develop units, laboratories, and resources for the classroom. Subjects range from rocks and landforms to weather; from local geology to specific resource people. Prerequisite: teaching experience. Elective Pass/Fail.
- 471-3 Earth Science for Teachers II.** Designed to help each teacher improve knowledge and skills of the earth sciences, develop units, laboratories, and resources for the classroom. Subjects range from rocks and landforms to weather; from local geology to specific resource people. Prerequisite: teaching experience. Elective Pass/Fail.
- 476-3 Pleistocene Geology.** Deposits, stratigraphy, and history of the Pleistocene epoch. Evidence for differentiating and dating the glacial and interglacial sequence examined including deep sea cores, soils, magnetic studies. Required field trips. Prerequisite: 220, 221. Elective Pass/Fail.
- 482-3 Coal Petrology.** Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens, and techniques. Prerequisite: 220 and 221 or consent of instructor. Elective Pass/Fail.
- 484-3 Palynology.** (Same as Botany 484.) Taxonomy, morphology, stratigraphic distribution, and ecology of fossil pollen, spores, and associated microfossils. Prerequisite: 220, 221, or consent of instructor. Elective Pass/Fail.
- 500-1 to 2 Teaching for Geology Graduate Students.**
- 510-3 Advanced Sedimentation.**
- 512-3 Sedimentary Petrology.**
- 513-2 Advanced Geologic Data Analysis.**
- 516-3 Industrial Rocks and Minerals.**
- 518-3 Clay Mineralogy.**
- 520-3 Igneous Petrology.**
- 521-3 Metamorphic Petrology.**
- 526-3 Advanced Topics in Applied Paleoecology.**
- 527-2 Micropaleontology I.**
- 528-2 Micropaleontology II.**
- 529-1 to 3 (1 per topic) Advanced Topics in Applied Invertebrate Paleontology.**
- 535-3 Advanced Hydrogeology.**
- 536-3 Advanced Studies in Geophysics.**
- 542-2 (1, 1) Seminar in Geology.**
- 565-3 Fundamentals of Structural Geology II.**
- 578-3 Fluvial Geomorphology.**
- 579-3 Advanced Geomorphology.**
- 582-3 Advanced Coal Petrology.**
- 584-2 Advanced Palynology.**
- 599-1 to 6 Thesis.**

Guidance and Educational Psychology

(Department, Major [Graduate Only], Courses)

The Department of Guidance and Educational Psychology does not offer an undergraduate major but offers courses for undergraduate credit which serve as electives for students in other programs.

Courses

100-2 Decision Making for Career Development. Examination of factors relating to career decision making. Emphasis on the continuous use of learned processes and information in vocational development. Supplementary group guidance and counseling sessions required. Prerequisite: consent of instructor.

307-3 Educational Psychology. The basic factors involved in the teaching-learning process including student characteristics, motivation, learning, and teacher-student relationships. The course activities are intended to prepare the student with a basic foundation in educational psychology for the purpose of teaching.

380-1 to 4 Practicum in Instructional Roles. One semester hour of credit for every three modules selected. Application of educational psychology in a practical teacher-learner situation. Class members conduct actual instructional activities with individuals or groups of students. Field activities are required and the students may be required to purchase additional materials not to exceed \$20. Prerequisite: consent of instructor.

412-3 Human Behavior and Mental Health. A study of the principles of human needs, mechanisms of adjustment, and factors and conditions in life that tend to affect mental health. Prerequisite: junior or senior standing.

422-2 to 3 Educational Measurement and Evaluation. For persons interested in methods of measuring and evaluating school-related cognitive and non-cognitive behavior. Those requiring experiences with teacher-made tests should register for two hours, while those seeking more comprehensive experiences, including standardized tests, should register for three hours. Elective Pass/Fail.

442-3 Introduction to Counseling and Guidance Systems. The following topics will be covered: purposes of counseling and guidance; counselor roles in various settings; approaches to counseling; guidance activities; and application of the above.

481-2 to 4 (2, 2) Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Prerequisite: consent of instructor and department.

491-1 to 6 Special Research Problems—Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of guidance. Prerequisite: advanced standing and consent of department.

494A-3 Child Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in elementary counseling. Enables the student to practice the role of the counselor under close supervision. During the semester, the student is required to spend 30-50 hours in actual counseling and consulting. Prerequisite: 537.

494B-3 Adolescent and Adult Counseling Practicum. Practice of counseling skills with an adolescent or an adult population in varied settings. The professional setting depends on the student's interest area. Individual and group supervision are provided. Use of tape recorder is required. Prerequisite: 538.

494C-3 Career Planning Practicum. Supervised experience in handling career development experiences at elementary, secondary, or college levels. Application of theoretical models to program development is stressed, including presentation of relevant lessons, handling of group guidance activities, and conducting individual career development counseling sessions. Intern experience in public school or college settings equal to one day per week is required. Prerequisite: 542.

494D-3 to 6 (3, 3) Practicum in School Psychology. Observation and participation in case conferences related to the development of psycho-educational assessment and planning, including teacher and parent consultations, field observations, and psychometric applications. Prerequisite: consent of instructor.

502-4 Basic Statistics.

506-4 Inferential Statistics.

507-4 Multiple Regression

511-3 Instructional Psychology.

515-3 The Psychological Aspects of Instructional Design.

516-3 Concept and Principle Learning: Design, Delivery, and Evaluation of Instruction.

517-3 Intellectual Strategy Learning: Design, Delivery, and Evaluation of Instruction.

518-3 Affective Outcomes: Design, Delivery, and Evaluation.

- 521-3 Analysis of Classroom Behavior—Consultative Practices for School Personnel.
- 530-4 Standardized Testing: Use and Interpretation.
- 531-3 Principles of Measurement.
- 532-2 Individual Intelligence Theory.
- 533-4 Individual Measurement and Practice.
- 537-4 Counseling with Children: Theory, Techniques, and Practice.
- 538-4 Interpersonal Relations: Theory and Practice.
- 540-3 Issues and Trends in School Guidance and Counseling.
- 542-4 Career Development Procedures and Practices.
- 543-3 Group Theory and Practice.
- 546-4 Personality Assessment.
- 551-3 The Supervision of Practicum.
- 555-3 to 6 (3, 3) Seminar in School Psychology.
- 562-6 (3, 3) Human Development in Education.
- 567-2 to 9 (2 to 6 per semester) Topical Seminar in Educational Psychology.
- 568-1 to 12 (1 to 6 per semester) Topical Seminar in Counseling and Guidance.
- 570-3 Humanistic and Behavioral Theories in Education.
- 580-2 to 12 (2 to 6 per semester) Doctoral Seminar in Educational Measurement and Statistics.
- 592-1 to 8 (1 to 6 per semester) Independent Study and Investigation.
- 593-1 to 4 Individual Research.
- 594-1 to 6 Advanced Practicum.
- 595-8 Internship in Applied Instructional Psychology.
- 599-1 to 6 Thesis.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

Health Education (Department, Major, Courses)

The Department of Health Education offers two specializations within the health education major and three programs of minimal professional preparation. The two specializations are:

- 1. Health Education in Secondary Schools. For those planning to teach or supervise health education in the secondary schools.
- 2. Health Education in Elementary Schools. For those planning to teach or supervise health education in the elementary schools.

The three minimal professional preparations are:

- 1. Health Education in Secondary Schools. For those certified to teach in Illinois secondary schools who wish minimal preparation to teach health education.
- 2. Health Education in Elementary Schools. For those certified to teach in Illinois elementary schools who wish minimal preparation to teach health education.
- 3. Driver Education. For those planning to teach driver education in Illinois secondary schools.

These specializations in general, constitute minimal preparation for the positions listed. Consequently, all candidates are strongly urged to complete additional work in the field.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements (must include GSE 201)</i>	45
<i>Requirements for Major in Health Education</i>	32
Health Education in Secondary Schools Specialization	
Health Education 305, 312, 313S, 326, 334, 355, 401, 405, 471 plus 7 elective hours with Health Education 301 as a recommended elective.	
Health Education in Elementary Schools Specialization	
Health Education 305, 312, 313S, 334, 350, 355, 401,	

405, 450, and Elementary Education 203 plus 3
elective hours with Health Education 301
as a recommended elective.

Professional Education Requirements 24
See Teacher Education Program, page 68.

Electives 19

Total 120

The three minimal professional preparations requirements for Illinois teachers are:

- Health Education in Secondary Schools: Health Education 301, 305, 312, 334, 355, 405, and 460
- Health Education in Elementary Schools: Health Education 301, 305, 312, 334, 350, 355, 405
- Driver Education: Health Education 302S, 313S, 442S, 443S, 475S, plus three hours of electives from the following: Health Education 323S, 334, 445S, 470S, 480S, 481S, 495S

Courses

- 301-3 Advanced Concepts of Health.** The interrelatedness and interdependence of health as a total concept. Concepts of health and health education within the context of an option-expanding world are examined. Emphasizes role of the individual in assuming responsibility for one's own health behavior as well as education for a health-activated citizenry.
- 302S-3 Driver and Traffic Safety Education—Introduction.** A beginning course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of the teaching environment is included. Prerequisite: a valid driver's license.
- 305-3 Principles and Foundations of Health Education.** An introductory professional course in the field, designed to implement the evolving concept that health education is both content and process; major concepts for a variety of teaching-learning approaches in school and other community settings are considered; health careers and opportunities in field are described.
- 311-3 Child Development.** An overview of child development from conception through puberty. Designed for the school teacher with an emphasis on the physical development of the child.
- 312-3 Emotional Health.** Concepts of positive emotional development in terms of influence in the classroom and other community settings.
- 313S-3 Introduction to Safety Education.** Introduces the principles and fundamentals of safety education. Concerns safety as a social problem and considers major accident areas, accident causes, liability and analyzes possible solutions to accident problems.
- 323S-3 Methods and Materials in Safety Education.** Learning strategies used in teaching safety for elementary and secondary school levels. Emphasizes selection and design of materials, participation and demonstration.
- 326-2 Measurement, Testing, and Evaluation in Health Education.** Approaches to construction, selection, and use of various kinds of test instruments, primarily in the cognitive domain. Other types of evaluative techniques introduced.
- 330-3 Consumer Health.** Federal and state legislation affecting consumer health; official watchdog agencies on consumer health; non-official agencies (AMA, CU, etc); health and medical protection by insurance, group practice, prepayment, etc; false and misleading advertising in health and medicine; cultists' and faddists' effect on consumer health.
- 334-3 Standard First Aid.** Provides students with first aid knowledge and skill competencies necessary to care for selected injuries and to meet certain emergencies. Provides for instructor authorization in the American National Red Cross course in Standard First Aid and Personal Safety.
- 350-3 Health Education in the Elementary School Curriculum.** Acquaints the prospective teacher in the elementary school with fundamental processes, techniques and instructional materials related to health education.
- 355-3 Introduction to Community Health.** Organization and administration in local,

state, and national official and non-official health agencies, their purposes and functions, and an overview of methods for meeting community health needs and for solving community health problems.

400-3 Health Appraisal of School Children. The teacher as a member of the health team in recognizing common health deviations. Emphasis on helping each child realize his full health potential.

401-3 Epidemiological Approaches to Disease Prevention and Control. Principles and practices in the cause, prevention, and control of diseases in various community settings.

405-3 Sex Education. Examines various programs of sex and family life education in schools, recognizing a range of community attitudes.

407-3 Drug Education. Meets requirements of Illinois state law for education concerning drugs including alcohol for grades K-12. Explores motivations behind use and abuse of drugs. Offers experiences in development of curriculum and teaching approaches and material.

434-3 Advanced First Aid and Emergency Care. Meets the needs of those in positions where a complexity of first aid and emergency care procedures are needed. American Red Cross authorization and consent of instructor required.

442S-5 Driver and Traffic Safety Education—Practicum. Provides prospective teachers with simulation, range, and on-road teaching experience with beginning drivers. Prerequisite: 302S.

443S-3 Driver and Traffic Safety Education—Program Administration. Emphasizes administration, reimbursement, scheduling, public relations, planning, and evaluation of driver education programs. Prerequisite: 442S or consent of instructor.

445S-2 Contemporary Specialized Laboratory Techniques. Provides teachers and other highway safety personnel with experience in specialized laboratory techniques, motorcycle rider, evasive and emergency maneuvers, multiple-car. Prerequisite: 443S or consent of instructor.

450-3 Health Programs in Elementary Schools. Orientation of teachers to health programs and learning strategies. Designed for elementary education majors.

460-3 Health Programs in Secondary Schools. Orientation of teachers to health programs and learning strategies. Designed for secondary education majors.

461-3 Health Education Summer Conference. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.

462-3 Health Education Summer Conference. Conference style and format are similar but themes change.

463-3 Health Education Summer Conference. Conference style and format are similar but themes change.

470S-2 Highway Safety as Related to Alcohol and Other Drugs. Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Prerequisite: advanced standing or consent of instructor.

471-2 Health Education Instructional Designs. Analysis of existing health education curricula with emphasis on student development of instructional designs and modules. Students will prepare, utilize, and critique materials. Prerequisite for student teaching in health education. Prerequisite: 305.

475S-3 Traffic Law Enforcement and Planning. Acquaints safety and driver education teachers and highway safety personnel with purposes of traffic law enforcement and engineering, and methods used to fulfill these purposes. Emphasis is placed upon ways of improving existing services and coordinating efforts of official and non-official agencies concerning traffic problems. Prerequisite: 302S or consent of instructor.

480S-3 Traffic and Driver Education Program Development. Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: 443S or consent of instructor.

481S-3 Traffic and Safety Education—Evaluation Techniques. Emphasizes methods of evaluation as applied to traffic and safety education programs. Prerequisite: 480S or consent of instructor.

485-3 International Health. Health beliefs, values, and practices of peoples in various cultures as related to a total way of life of potential value to both prospective teachers and students in other fields.

488-1 to 3 Environmental Dimensions of Health Education. Application of the principles of learning to understanding Man interacting with his environment. Emphasis

placed upon individual and community responsibilities for promoting environmental health. Rural and municipal sanitation programs and practices are included.

489-3 Introduction to Vital Statistics. An introduction to bio-statistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to biological happenings with emphasis on graphic presentation.

490-2 to 6 Field Experiences in School, Community Health or Safety Education. Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: consent of instructor.

491-3 Health Teaching/Learning: School and Community. Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education.

495S-3 Driver Education for the Handicapped. Methods and techniques in the use of assistive equipment and program materials for teaching handicapped persons how to drive. Prerequisite: advanced standing or consent of instructor.

500-4 Community Organization for Health Education.

510-3 Curriculum in Health Education.

511-3 Health Education Conference Practicum.

515-3 Review of Current Literature in Health Related Fields.

520-3 Special Projects in Health Education.

526-3 Evaluative Approaches to Health Education.

533A-4 Human Ecology I.

533B-4 Human Ecology II.

536-3 Professional Preparation in Health Education.

550S-3 Current Developments in Traffic and Safety Education.

572-3 Coordination and Supervision of School Health and Safety Programs.

590-8 Practicum in Community Health.

597-2 (1, 1) Seminar in Health Education.

598-3 (1.5, 1.5) Institute: Writing Research Proposals.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Higher Education (Department, Major [Graduate Only], Courses)

The Department of Higher Education does not offer an undergraduate major or minor but it does offer several courses for undergraduates who wish to learn about higher education, its history, institutions and organization, and current issues. Undergraduates interested in this area are advised by their regular academic advisers.

Courses

300-4 (2, 2) Studies in University Governance. An introductory course with emphasis on the role of the student in higher education in the United States. (a) Development of a thorough understanding of student-faculty and student-administration relations. (b) Emphasis upon student-Board of Trustees and student-community relations. Developed around the concepts of lay control and student participation, this course is primarily for students who are engaged in, or planning to engage in, student government; however, it is open to any interested person. Current issues are stressed. Elective Pass/Fail.

399-4 (2, 2) Problems of Higher Education in the United States. An introduction to the broad understanding of higher education in the United States designed to provide perspective. (a) Historical development with an emphasis on such basic concepts as lay control, academic freedom, and institutional response to social needs. (b) Problem approach is utilized to develop an understanding of faculty, student, and administration roles in solving problems, with an emphasis upon the instruments of governance in colleges and universities as well as upon the meaning of accountability, control, and support of higher education. This course is open to any interested student. Need not be taken in sequence. Elective Pass/Fail.

402-2 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education. Elective Pass/Fail.

- 501-2 Introduction to Research in Higher Education.
- 510-3 Higher Education in the United States.
- 512-3 Higher Education in Selected Nations.
- 513-3 Organization and Administration in Higher Education.
- 515-3 College Student Development: Operations and Policies.
- 516-3 College Students and College Cultures.
- 518-3 College Teacher and College Teaching.
- 521-3 Curriculum Design and Policy.
- 525-3 Philosophy of Higher Education.
- 526-3 The Community-Junior College.
- 528-3 Finance in Higher Education.
- 535-1 to 14 (a-h-1 to 3 each; i-1 to 6) Higher Education Seminar I.
- 545-1 to 16 (a-g-1 to 3 each; h-1 to 8) Higher Education Seminar II.
- 550-1 to 4 Higher Education Seminar III.
- 589-1 to 4 Higher Education Research Seminar.
- 590-1 to 6 Individual Readings.
- 591-1 to 6 Individual Study.
- 592-1 to 6 Special Problems (Individual).
- 595-1 to 6 Internship in Higher Education.
- 599-1 to 6 Thesis.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

History (Department, Major, Courses)

A major in history consists of a minimum of thirty-two semester hours of history courses. Students who plan advanced study in preparation for college teaching or other professional work are advised to take added work.

Courses may be chosen from all departmental offerings, except for GSB 105. No specific courses are required but they must represent at least two areas (American, European, Latin American/African) with a minimum of three courses in each or two courses in each of three areas. The student must also complete a total of three courses at the 400-level.

Transfer students, in order to be certified by the Department of History for a degree in history at Southern Illinois University at Carbondale, must have taken at least 16 semester hours in history at Southern Illinois University at Carbondale.

Students who intend to major in history are expected to consult with the department's undergraduate advisers at the time of registration in order to plan a course of study. Transfer students should report to the department prior to their first semester of attendance. All history majors should meet with the department's undergraduate advisers each semester to keep up-to-date the records of their progress toward the degree. A C average in the major is required for graduation. A 2.25 average in the major is required before student teaching will be approved by the department.

Students with exceptional scholarly promise may be invited into the departmental honors program which begins with a colloquium in the junior year and continues with an honors seminar and thesis prepared under the direction of a member of the department in the senior year. Graduation with departmental honors in history is given to those who successfully complete the program.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements	15
Requirements for Major in History	32 ¹
Two courses in American history, two courses in European history, and two courses in Latin American and/or African history, or three courses in each of two of the above fields.	
History electives	8-14

<i>Electives</i>	28
These may include 24 hours in professional education for teacher certification.	
<i>Total</i>	120

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45 ²
<i>Requirements for Major in History</i>	32 ¹
Two courses in American history, two courses in European history, and two courses in Latin American and/or African history, or three courses in each of two of the above fields.	
History electives	8-14
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	
<i>Electives</i>	19
<i>Total</i>	120

¹At least three courses must be taken at the 400 level.
²See catalog section titled Secondary Education for specific certification requirements in General Studies and other areas.

Minor

A minor in history consists of 16¹ semester hours. The student is advised to balance courses between at least two of the three fields of American, European, or Third World history. Transfer students, in order to have a minor in history, must have taken at least eight semester hours in history at Southern Illinois University at Carbondale.

¹For the purposes of teacher certification the minor must be 18 semester hours.

Courses

- 200-3 Problems in the History of World Civilization.** Seminar focusing on selected topics in world history. Prerequisite: President's Scholars status or consent of instructor. Elective Pass/Fail.
- 203-3 Topics in Comparative History.** A comparative study of recurring themes in the history of diverse societies and civilizations. Topics will vary and will be announced in advance. Topics to be covered include the problem of slavery, technology and society, war, and civilization. Elective Pass/Fail.
- 205-3 History of Western Civilization.** A brief survey of the major developments and trends in European history from ancient times through the 20th Century. Elective Pass/Fail.
- 310-4 Ancient Civilizations.** A comparative study of ancient near eastern and classical civilizations of the Fertile Crescent and the Mediterranean Basin: Mesopotamia, Egypt, Palestine, Greece, and Rome. Elective Pass/Fail.
- 313-4 Ideas in Western History before 1600.** A study of the major ideas which shaped the thinking of the Western World from ancient times through the Renaissance. Elective Pass/Fail.
- 315-4 Mediaeval Europe.** The emergence of Europe from the Age of Constantine to the Black Death, with emphasis on the political, socio-economic, and cultural forces which were at work creating Europe. Elective Pass/Fail.
- 320-4 Early Modern Europe.** The development of Europe from the 16th Century through the Age of the French Revolution. Elective Pass/Fail.
- 323-3 History and Artistic Creativity.** A selected exploration of the specific conditions in Western history, from the Renaissance to the present, which have encouraged and given direction to creativity in the arts. Elective Pass/Fail.
- 325-4 Modern Europe.** The development of Europe from the Age of the French Re-

volution to the present day. Elective Pass/Fail.

330-6 (3, 3) English History. (a) England to 1688; (b) England since 1688. Political, social, economic, and cultural history of England. Elective Pass/Fail.

337-4 Contemporary Soviet Minorities. A study of the over one hundred minorities which are a part of the Soviet Union. Emphasis will be placed on the relationships between the Great Russians and minority groups since the Russian Revolution. Elective Pass/Fail.

338-3 Eastern Europe. An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era. Elective Pass/Fail.

350-3 The Revolution and the Constitution. A study of the conflicting forces which produced the American Revolution, led to the creation of the federal union and shaped the early republic. Elective Pass/Fail.

354-3 The United States Since 1945. America enters the atomic age; a study of American society since the end of the Second World War and the role played by the United States in the world. Elective Pass/Fail.

362-6 (3, 3) Survey of Black American History. (Same as Black American Studies 311.) The black man's role and contribution in the building of America and his ongoing fight for equality. (a) African background to 1865. (b) 1865 to the present.

364-3 The Great Depression in the United States. Causes and effects of the great depression and of governmental measures for relief, recovery, and reform during the years 1929-1941. Elective Pass/Fail.

365-3 History of Social Welfare in America. Discussion of the changing attitudes and problems which Americans have applied to the problems of social welfare from the colonial period to the present. Focuses on the condition of the poor, the attitudes toward the poor, and the institutions, public and private, which were created to meet the obligations of social welfare.

367-3 History of Illinois. The history of the state from 1818 to the present.

368-3 Women in American History. Covers the role of women in colonial society, the impetus for an organized women's rights movement in the 19th century and how it related to general reform movements, and gains and setbacks in the industrial-urban society of the 20th century.

370-6 (3, 3) History of Latin America. (a) Colonial Latin America. (b) Independent Latin America. An introduction to the political, economic, social, and cultural development of Latin America from Precolumbian times to the present. Elective Pass/Fail.

380-6 (3, 3) History of East and South Asia. (a) China and Japan; (b) India and Southeast Asia. The first semester focuses on China and Japan from early times to the present; the second semester concentrates on India and Southeast Asia in modern times.

387-6 (3, 3) History of Africa. (Same as Black American Studies 314.) Precolonial history, 19th century political, social, and economic changes, colonialism, African nationalism, and independent. (a) to 1800; (b) since 1800. Elective Pass/Fail.

395-3 Honors. Great ideas and works of history, with discussion of conflicting interpretations of major historical problems. Prerequisite: junior standing and consent of department.

396-2 to 8 Independent Study in Classical Studies Program. (See Classical Studies 496.)

415-3 European Rural Society, 400-1100 A.D. Monks, priests, peasants, barons, and kings; an historical sociology of the ecclesiastical and feudal regimes which replaced classical civilization after the fall of the Roman Empire in the West. Elective Pass/Fail.

416-3 European Urban Society, 1000-1550 A.D. Merchants, bankers, craftsmen, lawyers, and bureaucrats: a sociological and economic analysis of the origins and development of early modern European urban institutions. Elective Pass/Fail.

417-4 Cultural History of the Middle Ages. Selected problems in the development of mediaeval culture, the mediaeval universities, and the transmission of ancient ideas to the modern world. Elective Pass/Fail.

418-3 Renaissance. The focus is on the Renaissance in Italy and in particular on its relation to the social and economic context in which it developed. The spread of humanism and humanistic values to other areas of Europe will also be considered. Elective Pass/Fail.

420-3 Reformation. Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries. Elective Pass/Fail.

421-6 (3, 3) Absolutism and Revolution: Europe 1600-1815. (a) 1600-1715; (b) 1715-1815. The development of enlightened despotism, the rise of the revolutionary movement, and the Napoleonic period. Elective Pass/Fail.

422-6 (3, 3) Intellectual History of Modern Europe. (a) 1600-1815; (b) Since 1815. The first semester will cover the Age of Reason, the Enlightenment, and Early 19th

Century Romanticism. The second semester will cover the period from Marx and Darwin to the Contemporary World. Elective Pass/Fail.

423-4 Diplomatic History of Europe Since the Congress of Vienna. A study of the diplomatic relations between the nations of Europe in the 19th and 20th centuries.

424-6 (3, 3) Social and Revolutionary Movements in Nineteenth Century Europe. (a) 1815-1871; (b) 1871-1914. Changing social and political structure of Europe caused by the impact of industrialization and the French Revolution. The consequences of these developments in terms of the emergence of new social forces and the development of movements for social and political revolution. Elective Pass/Fail.

425-6 (3, 3) Twentieth Century Europe. (a) World War I to World War II; (b) World War II and after. Problems in the political, social, and military history of Europe in the 20th Century. Elective Pass/Fail.

430-3 The British Empire-Commonwealth. The rise of the British Empire and its subsequent development into a commonwealth of self-governing nations. Elective Pass/Fail.

431-3 British Constitutional History. The development of the English constitutional system from its origins to modern times. Elective Pass/Fail.

432-4 History of France. Social, economic, political, and intellectual evolution from mediaeval origins to the present day. French contributions to western culture. Elective Pass/Fail.

433-4 History of Germany. German state and society from the Middle Ages to the present day. Elective Pass/Fail.

434-3 History of Scandinavia. Denmark, Norway, Sweden, Finland, and Iceland. Related history of the Baltic and North Sea regions, from prehistoric times to the present. Elective Pass/Fail.

435-3 History of Modern Italy. Italy in the 19th and 20th centuries. Emphasis is on continuing problems: the tensions between agricultural south and industrial north, Italy's role as a Great Power, and the persistence of centrifugal forces in Italian politics. Elective Pass/Fail.

436-6 (3, 3) History of Spain. (a) To 1700; (b) Since 1700. Institutional, intellectual, socio-economics, and political history from the Middle Ages to the present. Elective Pass/Fail for (b) only.

437-6 (3, 3) History of Russia. (a) Imperial Russia from Peter the Great to the emancipation of the serfs; (b) Russia since emancipation: modernization and revolution. The study of Russian history from Peter the Great to the present. Elective Pass/Fail.

450-4 American Colonial History. The discovery, settlement, and development of the colonies before the American Revolution.

451-3 American Party Politics: Federal Period Through the Age of Jackson. Issues and conflicts which dominated the American scene from 1790 through the Jacksonian Era. Elective Pass/Fail.

452-6 (3, 3) United States History 1850-1896. (a) Civil War era; (b) the origins of modern America; reconstruction and nationalization: 1865-1896. The study of the background to the Civil War, the Civil War, Reconstruction, and the Gilded Age.

453-6 (3, 3) Twentieth Century American History. (a) 1896-1921; (b) 1921-1945. The history of the United States since 1896 with emphasis upon political history and behavior.

460-6 (3, 3) Social and Intellectual History of the United States. (a) To 1860; (b) since 1860. The development of American society and a study of the various types of economic, social, and political thought that have influenced it.

461-6 (3, 3) Constitutional History of the United States. (a) To 1877; (b) from 1877. Origin and development of the American Constitution from the English background to the present time. Stress is placed on the political, social, and economic forces which influenced the American constitutional system. Elective Pass/Fail.

462-4 Problems in Black American History. Developments which formed the foundation for the "Black Revolution" of the present time.

463-6 (3, 3) History of American Diplomacy. (a) To 1914; (b) Since 1914. General consideration of American foreign policy and the emergence of the United States as world power. Elective Pass/Fail.

464-6 (3, 3) American Economic History. (a) To 1869; (b) Since 1869. The growth of the American economy from the colonial period to the present. Emphasis is placed on the historical forces which influenced the American economic system.

465-6 (3, 3) History of the South. (a) The Old South; (b) The New South. Social, economic, political, and cultural developments of the South.

466-6 (3, 3) History of the American West. (a) To 1850; (b) Since 1850. The American frontier and its impact on American society from the colonial period to the 20th Century.

470-3 Colonial Latin America: Policies and Practices. Theory and operation of the

Spanish and Portuguese colonial systems in the New World. Elective Pass/Fail.

471-6 (3, 3) History of Mexico. (a) 19th Century; (b) 20th Century. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to the present time with emphasis upon the Mexican Revolutions. Elective Pass/Fail.

472-3 The Caribbean Area. A history of the Caribbean from Columbus to modern times. Elective Pass/Fail.

473-3 Argentina and Chile. A narrative and comparative history of these two leading Latin American nations with emphasis on the period since independence. Elective Pass/Fail.

474-3 Andean South America. The political, economic, social and cultural development of the Andean nations from Precolumbian times to the present. Elective Pass/Fail.

475-3 History of Brazil. The political, social, cultural and economic development of Latin America's largest nation. Elective Pass/Fail.

476-3 Dictatorships in Latin America. A political, economic, social and military study of the domestic and international aspects of dictatorship. Elective Pass/Fail.

480-6 (3, 3) History of Chinese Civilization. (a) Traditional China; (b) Modern China. The first semester provides a full coverage of traditional China with emphasis on classical philosophies, religions, historical writings, literature, arts and science. The second semester deals with the transformation of China into the modern ages. Elective Pass/Fail.

484-3 History of Inner-Asian Relations. Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier. Elective Pass/Fail.

485-3 History of the Middle East. A study of Middle East from the 7th through the 16th centuries concentrating on the following major themes: the development of Islamic civilization, the mediaeval Muslim world, the disintegration of the Arab caliphate, the rise of the Ottoman Turks, and the development of the Ottoman Empire. Elective Pass/Fail.

487-4 Topics in African History. Investigations into the most important historical questions of Sub-Saharan Africa. Prerequisite: 387a, b or consent of instructor, or graduate standing. Elective Pass/Fail.

490-1 to 4 Special Readings in History. Supervised readings for students with sufficient background. Prerequisite: Registration by special permission only.

491-3 Great Historians. Writings of historians from Herodotus to Toynbee. Elective Pass/Fail.

492-3 Methods of Historical Research. Fundamentals of historical investigation, criticism and composition. Open not only to history majors but with permission of instructor to those in other disciplines interested in history as a research tool.

493-3 to 6 (3, 3) Problems in U.S. History. Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.

495-4 History Honors. Principles of historical method, research, and writing for senior honor students only. Not for graduate credit. Prerequisite: consent of department.

515-3 to 6 (3, 3) Studies in Mediaeval and Renaissance History.

516-4 to 8 (4, 4) Seminar in Mediaeval and Renaissance History.

520-3 to 6 (3, 3) Studies in Early Modern European History.

521-4 to 8 (4, 4) Seminar in Early Modern European History.

522-3 to 6 (3, 3) Studies in Modern European History.

523-4 to 8 (4, 4) Seminar in Modern European History.

530-4 Seminar in English History.

550-4 Seminar in American Colonial History.

551-4 The Age of Jefferson.

552-4 Reform Movements in the Pre-Civil War Period.

553-4 Seminar in Twentieth Century United States History.

554-4 New Viewpoints in American History.

555-4 to 8 (4, 4) Seminar in American History.

561-4 Seminar in American Constitutional History.

562-4 Seminar in Black American History.

563-4 Seminar in American Diplomatic History.

564-4 Seminar in American Economic History.

567-4 Seminar in Illinois History.

570-8 (4, 4) Seminar in Latin American History.

580-4 Seminar in Modern China.

587-4 Seminar in African History.

590-1 to 8 (1 to 3 per semester) Readings in History.

591-2 to 5 Independent Investigation.

599-1 to 6 Thesis.

600-1 to 30 (1 to 16 per semester) Dissertation.

Home Economics Education (Department, Major, Courses)

Bachelor of Science Degree, College of Education

HOME ECONOMICS EDUCATION MAJOR—TEACHING VOCATIONAL HOME ECONOMICS SPECIALIZATION

These courses meet the needs of students desiring to teach consumer homemaking and occupational home economics in school departments maintained according to the provisions of the federal vocational acts. Southern Illinois University at Carbondale is approved for preparing vocational home economics teachers.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Home Economics Education</i>	75
GSB 202, 203, 212; GSC 101; GSD 101 ¹ , 117 or 118 ¹ , 153, 107; GSE 201; 2 hours of physical education activity courses ..	(29)
Chemistry 140a	(4)
Child and Family 227, 237, 345	9
Clothing and Textiles 127a,b, 227, 304a,b	9
Family Economics and Management 320, 330, 340, 350, 351	13
Food and Nutrition 100, 156, 335	8
Interior Design 131	4
Home Economics Education 306, 309, 425	8
Professional Education	24
See Teacher Education Program, page 68.	
<hr/> <i>Total</i>	120

HOME ECONOMICS MAJOR—TEACHING VOCATIONAL HOME ECONOMICS SPECIALIZATION, SPECIAL EDUCATION EMPHASIS

These courses prepare students for positions in teaching special needs learners.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Home Economics Education</i>	78
GSB 202, 203, 212; GSC 101; GSD 101, 117 or 118 ¹ ; 153, 107, GSE 201, 2 hours of physical education activity courses	(29)
Chemistry 140a	(4)
Child and Family 227, 237	6
Clothing and Textiles 127a, b, 227	6
Family Economics and Management 320, 350	5
Food and Nutrition 100, 156, 355	8
Interior Design 131	4
Home Economics Education 306, 309, 416, 421, 425	13
Professional Education	24
See Teacher Education Program, page 68.	
Special Education 400, 402, 411, 420	12
<hr/> <i>Total</i>	123

¹ GSD 101 and 117 or 118 are prerequisite to student teaching. For additional information concerning student teaching prerequisites refer to the section of this catalog titled Professional Education Experiences. To fulfill certification requirements, a student must complete 8 semester hours in language arts.

HOME ECONOMICS EDUCATION MAJOR—EXTENSION SPECIALIZATION

These courses prepare students for positions as home advisers, 4-H Club advisers, and with further training, extension specialists.

General Studies Requirements 45

Requirements for Major in Home Economics Education 66

 GSB 202, 203, 212; GSC 101; GSD 101, 118, 107,
 153 (25)

 Chemistry 140a,b (4) + 4

 Child and Family 227, 237, 345 9

 Clothing and Textiles 127a,b, 227, 304a,b 9

 Family Economics and Management 320, 330, 340,
 350, 351 13

 Food and Nutrition 100, 156, 256, 335 11

 Home Economics Education 306, 370, 371, 421 11

 Interior Design 131 4

 Journalism 340 or substitute 2

 Speech 221 3

Electives 9

Total 120

Courses

- 111-1 Home Economics Careers.** (Same as Human Resources 111.) An introduction to career opportunities in the broad fields of home economics and related occupations.
- 300-3 Occupational Simulation and Cluster Studies.** (See Occupational Education 300.)
- 306-1 Home Economics as a Profession.** A social, psychological and philosophical interpretation of home economics in today's world. Overview of career areas and the practice of the dual role of homemaker—professional worker.
- 307-2 Methods of Teaching for Non-Teaching Majors.** Educational principles for use in situations mostly outside of the formal classroom. Selection and organization of materials. Practice in using a variety of techniques and teaching aids.
- 309-4 Methods and Curriculum in Home Economics.** The total home economics program. Curriculum planning for the course and the unit. Teaching methods especially suitable for home economics classes. Teaching aids and materials. Evaluation of instruction. Managing the business of the department. Possible expense for materials for teaching experiences: \$5.00. Prerequisite: Basic Professional Block in Education, eight semester hours.
- 310-2 Adult Education.** Planning and preparing for adult education programs. Observation and assisting in adult classes. Possible expense for professional materials: \$10.00. Prerequisite: Home Economics Education 309.
- 313-1 to 3 Special Problems.** Independent directed study for selected students.
- 315-2 Leadership of Youth and Peer Groups.** (See Agricultural Industries 315.)
- 370-4 History, Development and Principles of Extension Work.** The history and philosophy of cooperative extension. Principles and practice of organizing and administering extension work in home economics. Offered alternate years. Transportation expense for field trips: approximately \$5.00.
- 371-4 Field Experience.** Six weeks of observing and assisting a county home economics extension adviser. Supervised experiences in various phases of extension work. Student must provide for own living and travel expenses. Prerequisite: 370.
- 372-2 Practicum-Home and Family Life Education.** Provides pre-service home economics teachers and home economics extension advisers experiences in observing and working with families with respect to problems, needs, and values as a basis for more effective teaching.
- 395-2 to 24 Occupational Internship.** (See Occupational Education 395.)
- 399-3 Fundamentals for Everyday Living.** A survey course for non-majors dealing with economics and management of personal and family resources: food, clothing selection and buying, financial management, personal relationships, consumer education and protection. Emphasis reflects needs of the students. Field trip.

407-1 to 4 Workshop. Designed to aid home economics teachers, supervisors, and leaders in the field with current problems. Resource people are used. Discussions, reports, lectures, and other methods of analyzing and working on solutions to problems. Emphasis for the workshop will be stated in the announcement of the course.

414-2 Home Economics for Elementary Teachers. Identification and development of meaningful home economics related experiences appropriate for various levels of elementary curriculum. Interpretation of current vocational education legislation and trends affecting elementary programs.

416-3 Working with Special Needs Learners. Theoretical and applied concepts in teaching special needs learners. Affective aspects of learning are emphasized. Curricula and teaching materials are examined and prepared. Field trips.

417-3 Teaching Concepts and Generalizations in Home Economics. Use of cooperative teacher-pupil planning to develop curriculum based on subject matter concepts and generalizations. Techniques for helping students to take part in planning, implementation of learning experiences, and evaluation. Provides practice in use of group process to plan for sequential learnings. Prerequisite: consent of instructor.

418-3 Post-Secondary Cooperative Vocational Education Programs. (See Occupational Education 426.)

421-2 Demonstration and Laboratory Techniques in Home Economics Education. Practice in planning and carrying out instructional demonstrations in home economics for youth and adults. Use of audiovisual aids and hand-outs. Procedures for laboratory and guided practice to develop psychomotor skills. Attention given to TV presentations. Possible expense for materials to use in classroom demonstrations \$5.00 to \$8.00.

425-3 Introduction to Cooperative Vocational Education. (See Occupational Education 425.)

426-2 Individualizing Instruction in Home Economics. A study of rationale for individualizing instruction in an examination of components, characteristics, and appropriateness of individualized programs. Designing and developing individualized methods. Prerequisite: student teaching or consent of instructor.

485-3 Principles and Philosophies of Vocational and Technical Education. (See Occupational Education 485.)

486-2 Women and the Politics of Education. Ways of organizing to implement legislation for social needs. How to have input into decisions which affect the educational community—reimbursement, grants, funding. The need, impact, and opportunity for careers in public service as these relate to individual, family, and societal needs. Field trips.

490-2 to 4 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department.

500-3 Research Methods.

501-3 Legislation, Organization, and Application of Occupational Education.

505-3 Home Economics Programs in the Schools.

506-3 Evaluative Procedures in Home Economics.

510-3 Supervision of Home Economics.

515-3 Trends and Issues in Home Economics Education.

516-3 Advanced Methods of Teaching Home Economics.

517-3 Methods and Materials for Adult Programs in Home Economics.

525-3 Cooperative Vocational-Technical Education.

526-3 Cooperative Post-Secondary Occupational Education.

571-2 Recent Research.

573-1 to 4 Seminar: Research in Home Economics.

592-1 to 4 Special Problems.

594-1 to 3 Practicum in Supervision.

599-2 to 6 Thesis.

600-1 to 32 Dissertation.

Human Resources (College Courses)

Courses

101-3 Human Needs and Resources. Survey of social problems, institutions, theories and strategies for meeting the needs of individuals, groups, and communities in American society.

111-1 Home Economics Careers. (See Home Economics Education 111.)

258-1 to 30 Work Experience Credit. Credit for work experience relevant to the particular departmental programs: prior to entrance into the University; work experi-

ence incorporated into instructional programs through internship; cooperative work experience programs between the department and the Office of Student Work and Financial Assistance. Credit hours to be granted to be determined by the department chairman.

259-1 to 24 Occupational Education Credit. Credit for educational experiences in technical schools and institutes, junior college technical and occupational programs and employee training relevant to the particular departmental programs. Credit hours granted to be determined by the department chairman.

305-1 to 4 College of Human Resources Honors Seminar. Readings and group discussions in areas of current interest. Prerequisite: junior standing, GPA of 3.0 overall.

306-1 to 4 College of Human Resources Honors Seminar. Varying topics studied in breadth and depth. Maximum opportunity for student participation in the exploration of the subject. Prerequisite: junior standing, GPA of 3.0 overall.

387-1 to 6 College of Human Resources Special Problems-Honors. Directed study in specialized problems associated with human resources. Prerequisite: junior standing, GPA of 3.0 overall.

388-1 to 6 College of Human Resources Research and Investigations-Honors. Supervised research and investigation in the area of human resources. Prerequisite: junior standing, GPA of 3.0 overall.

410-3 Resources for the Elderly. Recognition and examination of needs, situations, and issues affecting elderly persons; resources and sources of benefits available. Emphasis on techniques and application of information through interaction with the elderly. Prerequisite: two courses in behavioral sciences.

Industrial Technology (Major, Courses)

The industrial technology major has as its objective the training of qualified personnel who can develop and direct the manufacture and distribution of products.

The program is a balanced curriculum of studies drawn from a variety of disciplines relating to industry. Included in the curriculum is the study of materials and manufacturing processes, principles of distribution, and concepts of industrial management and human relations. Communication skills, humanities, and social sciences are studied to develop overall abilities. Knowledge of physical sciences, mathematics, design, and technical skills gained from the program allow the graduate to cope with technical and production problems.

the industrial technology curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a Bachelor of Science degree within two years. A graduate of a two-year industrially-oriented occupational program, such as aviation, architecture, automotive, construction drafting, data processing, electrical, machine tool, mechanical, mid-management, supervision, and welding may have an excellent preparation to pursue a Bachelor of Science degree with a major in industrial technology.

Students with work related experience may receive credit toward the degree via Industrial Technology 258.

Additional flexibility in earning credit toward the degree is provided through off-campus courses and cooperative work experience. Cooperative work experience is available to students who qualify with the provision that meaningful employment is available in the participating industries.

Off-campus courses for students in the industrial technology program are offered in geographical locations with a high population density whenever it is apparent that there is a need and potential enrollment to justify scheduling a class, it is possible to obtain a faculty member to teach the class, and adequate laboratory and library facilities are available.

Bachelor of Science Degree, School of Engineering and Technology

INDUSTRIAL TECHNOLOGY MAJOR

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Industrial Technology</i>	75
Physics 203a,b, 253a,b	(6) + 2
GSD 118	(2)
Mathematics 111	(4) + 1
Engineering 222, 361	4
Engineering Technology 102a,b,c, 245a	9
Industrial Technology 100, 307, 308, 309, 310, 358, 365, 375, 382, 440, 465a	34
Psychology 320, Administrative Science 301 or 385	3
Technical electives	22
Groups of electives selected from the areas of manufactur- ing, technical sales, supervision, industrial design, and other technical fields.	
<i>Total</i>	120

INDUSTRIAL TECHNOLOGY MAJOR—OCCUPATIONAL ALTERNATIVE SPECIALIZATION

For students from two-year industry-related occupational programs in a community college or technical institute. Also, students with related work experience will receive credit and qualify for this alternative.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Industrial Technology</i>	75
Physics 203a,b, 253a,b	(6) + 2
GSD 118	(2)
Mathematics 111	(4) + 1
Engineering 222	2
Engineering Technology 102a	2
Industrial Technology 100, 308, 307, 358, 365, 375, 382, 440, 465a	26
Technical electives	42
<i>Total</i>	120

Courses

Safety glasses, a suitable calculator or slide rule, and textbooks are required for most of the following courses.

- 100-0 Orientation. (See Engineering Technology 100.)
- 258-2 to 30 Work Experience. Credit for work performed which would be related to the student's educational objective. Credit is established by departmental evaluation.
- 259-2 to 50 Occupational Credit. For occupational credit earned at junior colleges and technical institutes. Credit is established by departmental evaluation.
- 307-3 Analytical Problems in Technology. Methods of formulation and solution of special problems encountered in industry and technology using advanced techniques. Prerequisite: Mathematics 111 or equivalent.
- 308-4 Processes I. Introduction to the basic processes, equipment, and materials used in industry. Includes plastics, metal removal, casting, metal forming, and materials joining.
- 309-4 Processes II. A comprehensive study of thermoset and thermoplastic principles including the commercially available resins and basic processes used in the plastic

industry. Advanced study of metal removal principles emphasizing cutting theory, economics, and non-traditional methods. Laboratory. Prerequisite: 308.

310-4 Processes III. Advanced study of metal casting processes, testing instruments, and production equipment. Analysis of metal forming processes with emphasis on the newer techniques of explosive, electro-discharge, powder metallurgy, and ultrasonic. Advanced metal joining methods. Laboratory. Prerequisite: 308.

319-2 to 30 Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences, and examinations. Prerequisite: consent of instructor.

335-3 Metallurgy and Heat Treatment. Analysis of metal structures and principles and processes of heat treatment. Laboratory. Prerequisite: Mathematics 111.

340-3 Numerical Control. Principles of numerically controlled processes, equipment and programming. Includes APT computer language. Laboratory. Prerequisite: 308, Engineering Technology 102, Engineering 222.

341-3 Maintenance. Principles and practices of maintenance department organization, preventative procedures, and typical equipment problems. Also, includes related topics such as plant protection, custodial services, and maintenance of power plants.

342-3 Industrial Finishing. Methods and equipment of industrial coating and surface treatment processes, with emphasis in process selection for economy and function. Prerequisite: 308.

351-3 Industrial Metrology. Error analysis. Measurement standards and inspection systems. Prerequisite: 365.

354-3 Plastics Technology. Advanced study of plastic processes concentrating on test methods, material selection, and an in-depth study of an assigned plastic process. Laboratory.

358-3 Materials Handling and Plant Layout. Methods and equipment of materials handling. Plant layout techniques. Students are assigned a plant layout project. Prerequisite: 375, 382.

362-3 Industrial Packaging. Analysis of packing principles, equipment, and processes such as paper, glass, metal containers, and plastics.

365-3 Quality Control. Analysis of control charts, acceptance sampling procedures, inspection systems, reliability and quality experiments.

369-3 Industrial Design. Introduction to the basic design concepts including design process developments, design phases, and communications. Emphasis on factors influencing design, design analysis, and creative thinking.

375-3 Production and Inventory Control. Production and inventory control systems with emphasis on cost analysis. Applicable operations research techniques.

379-3 Machine and Tool Design. Emphasis on metal processing equipment design. Prerequisite: 308, 369 recommended.

382-3 Motion and Time Study. Principles and practices of motion and time study including process charts, operation charts, motion summery, and time standards.

425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating, and control of industrial processes. Prerequisite: 309, 310.

440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems for solution which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 358, 365, 375, 382, or consent of instructor.

450-3 Industrial Systems Analysis. Teaches the systems required for successful industrial operations. The role of the computer in system design and application is emphasized. Prerequisite: 365, 375, Engineering 222.

465-7 (4, 3) Industrial Safety. (a) Principles of industrial accident prevention; accident statistics and costs; appraising safety performance; and industrial hazards and safeguards. Emphasis is placed on the Occupational Safety and Health Act of 1970. Prerequisite: senior standing. (b) Effective industrial safety organizations, management, and supervision; safety psychology, and training programs. Prerequisite: senior standing.

Instructional Materials (Department, Minor, Courses)

Courses in the utilization and administration of teaching materials are designed to train both audiovisual coordinators and librarians to become fully qualified instructional materials specialists who can administer all teaching materials.

Minor

Persons trained primarily as teachers may qualify for part-time professional service in a school library by completing at least 18 hours of work in approved courses which are 401, 405, 406, 407, 408, and 409.

Courses

400-2 Library Research Methods. Introduction to the use of library materials for graduate research. The use of bibliographies and reference works in various subjects. The student will consult sources in his own discipline. Not open to students in the department.

401-3 Introduction to Technical Services. Organization of library materials. Emphasis on cataloging and classification. Includes acquisition, processing, and circulation of materials. The Dewey Decimal classification system and Sears list of subject headings are stressed. Laboratory assignments.

405-3 Media for Children. Study of aids, methods, and criteria for the selection and use of books and other instructional materials for children in the elementary schools.

406-3 Media for Young People. A study of the aids, methods, and criteria for the selection and use of books and other instructional materials for students in the high schools.

407-3 Basic Reference Sources. Introduction to the principles and methods of reference work. Concentration on the study and examination of the tools which form the basic reference collection of the school library.

408-3 Selection of Media. Evaluation of print and non-print media; resources and services; competencies for efficient purchasing, selecting and utilizing media.

409-4 Administration of the School Media Program. Functions and management of elementary and secondary school media programs with emphasis on services, personnel, financial aspects, facilities, and evaluation. Current issues and trends as reflected in the literature.

440-3 Photography for Teachers. Photography as a tool of communication in the modern school. Techniques of camera handling, visually planning a story, macrophotography, and color slides.

445-3 Local Production of Educational Media. The study of the various processes and techniques used by classroom teachers in the production of locally-made non-photographic instructional materials. Prerequisite: Education 304a or consent of instructor.

447-3 Photographic Preparation of Educational Media. Techniques of photography used in producing prints, overhead transparencies, daylight slides, high contrast materials, picture stories, filmstrips, and other photographic instructional materials. Prerequisite: 440 or consent of instructor.

450-3 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

470-2 Organization and Production of Media for Self-Instruction. The study of various programming techniques and the procedures used in producing, designing, and evaluating materials used for self-instructional purposes. Includes organizing a teaching segment and producing the needed materials to create a self-instructional package.

480-2 Simulation and Gaming. (Same as Secondary Education 480) The role of simulation and gaming in instruction, the availability of commercial games and simulation devices, and the theoretical backgrounds used in constructing teacher-made games.

501-5 Production and Utilization of Media.

507-3 Reference Services of the School Media Center.

510-2 Mass Communication in Education.

513-3 Organization of the Nonbook Collection.

520-2 The Library of Congress Classification Scheme.

522-3 Selection for the Junior College Media Program.

523-3 Administration of the Junior College Media Program.

530-3 History of Media.

545-2 Instructional Design.

546-3 Integration of Educational Media.

549-2 Visual Learning.

550-3 Seminar in Educational Television.

554-3 Administration of an Educational Media Center.

555-4 Survey of Research and Developments in Educational Media.

- 560-2 to 4 Seminar in Educational Media.
- 590-1 to 3 Readings in Educational Media.
- 591-1 to 3 Individual Study in Educational Media.
- 592-1 to 3 Special Problems in Educational Media.
- 594-6 to 12 (6, 6) Practicum.
- 599-4 to 6 Thesis.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

Interior Design (Department, Major, Courses)

The interior design curriculum is planned to assist students in preparing to serve the interior design and architectural professions in the design of public, commercial, and residential buildings; including spatial concepts, interior systems, office landscape, traffic and communication, and human factors. An in-depth understanding of the relevancy of the curriculum to the professions is given the students through lectures and critiques by visiting interior designers and architects.

Employment opportunities exist in interior design studios and architectural firms; as interior decorators; and in various retail organizations and furnishing manufacturers.

Allowance should be made in the student's budget to cover the expense of equipment, expendable supplies, and expenses involved in three required field trips.

Bachelor of Science Degree, College of Human Resources

General Studies Requirements	45
Requirements for Major in Interior Design	75
Architectural Technology 111, 124, 125, 214	23.5
Art 200, 207	6
Clothing and Textiles 104	2
Interior Design 231, 300, 381, 382, 384, 390,	
391a,b,c, 394, 491	35
Electives	8.5
Recommended electives: GSC 101, Administrative Sciences	
170, Finance 271, Journalism, 340, Cinema and	
Photography 320, Interior Design 470, 481, 492; Thea-	
ter 207, 412	
Total	120

Courses

- 131-4 Introduction to Design, Home Furnishings and Interiors. Analysis of the visual environment, principles and elements of design and their relation to selection and arrangement of furniture and use of various media in design of residential interiors. Not open to interior design majors. Lecture and laboratory. Elective Pass/Fail.
- 231-3 Introduction to Interior Design. Introduction to principles of two- and three-dimensional design through the application of purposeful experiments with emphasis on functional uses of form and their relationship in space. Various media, application and viewpoints are used. Open to interior design majors only. Lecture and laboratory.
- 300-2 Display and Exhibition Design. Application of design principles and use of graphics in display. Studies in two- and three-dimensional display and exhibition; model-making techniques. Lecture and laboratory. Prerequisite: 131 or 231 or consent of chairman. Elective Pass/Fail.
- 371-4 Professional Internship. Supervised internship in interior design providing professional development of the intern through actual working conditions. Summer session only. Prerequisite: interior design majors within four semesters of graduation and consent of chairman. Mandatory Pass/Fail.

381-2 History of Interior Design through the 19th Century. Furnishings and interiors from antiquity to the late 19th Century. Lecture.

382-4 History of 20th Century Interior Design and the Design and Methods of Furniture Construction. History of furnishings, designers, and interiors from late 19th century to the present. Anthropometrics and systems analysis of furniture design, construction, and production. Working drawing and models. Lecture and Laboratory. Prerequisite: 381, Architectural Technology 111, or consent of chairman.

384-3 Systems in Architectural Interiors. Technical survey of mechanical equipment in buildings with emphasis on lighting and illumination design. Consideration will also be given to environmental comfort, acoustics, sanitation, and code requirements. Lecture. Prerequisite: Architectural Technology 214 or consent of chairman.

390-3 Design Presentation and Delineation. Methods, materials, and media are explored to find the most satisfactory way to present interior design to clients, including creation of three-dimensional delineation of interior designs in varied media. Lecture and laboratory.

391-12 (4, 4, 4) Intermediate Interior Design. Interior design of total environment concepts integrating interior and architectural functions through increasingly complex projects. (a) Residential. (b) Restaurant and commercial. (c) Office and public building planning. Must be taken in sequence. Lecture and laboratory. Prerequisite: 390, Architectural Technology 214, or consent of chairman.

394-3 Contract Interior Design and Professional Practice. Residential and contract interiors and business principles of interior design, including systems, forms, and logistics of money and materials. Lecture and laboratory. Prerequisite: 391c or consent of chairman.

418-1 to 6 Workshop in Interior Design. Current problems facing the professional interior designer. Discussion, reports, lectures, design solution presentations, and other methods of analyzing and working on design problems. Prerequisite: eight hours in interior design or consent of chairman.

470-3 Interior Design Seminar. Development of systematic approach involving systems analysis, human factors engineering, environmental variables. Prerequisite: eight hours in interior design or consent of chairman.

481-1 to 4 Readings. Selected readings in the area of individual interests in design-related research. Prerequisite: eight hours in interior design or consent of chairman.

491-3 Advanced Interior Design. Systematic analysis of human factors as determinants of design solutions for large-scale interiors. Lecture and laboratory. Prerequisite: 391c or consent of chairman.

492-1 to 5 Special Problems. Directed independent work and study in areas determined by the student's interests and needs. Lecture and laboratory. Prerequisite: 18 hours in interior design or consent of chairman.

Journalism (School, Major, Courses)

The School of Journalism prepares academically sound, technically proficient, capable, and responsible graduates for professional journalistic careers. These careers, depending upon the level and direction of studies, may be found in news-editorial and advertising positions on newspapers, magazines, cable communications systems, and other news media; in other advertising careers; and in public relations, media management, photojournalism, teaching, and research.

Two specializations, news-editorial and advertising, are accredited by the American Council on Education for Journalism, the agency approved by the U.S. Department of Health, Education and Welfare to accredit in journalism education. Early in the junior year the student must decide upon his specialization, either of which provides a number of electives which permit the student to explore other areas in journalism.

ADVERTISING SPECIALIZATION

Students electing the advertising specialization develop their abilities to analyze problems and identify the roles advertising and other communications can play in solving them; develop tools of planning, executing, and controlling advertising campaigns; and develop skills in the use of language and other

message forms for specific purposes. A core of courses totaling 21 hours is required of all students, leaving 9 to 13 hours for work in one or more of the nine areas of interest mentioned in the following paragraph. This program helps prepare students to enter a wide variety of positions with advertising agencies, in the media, and related fields.

NEWS-EDITORIAL SPECIALIZATION

Students who elect the news-editorial specialization gain thorough professional training in both theory and practice in a number of related fields. These include daily and weekly newspapers, magazines, telecommunications, media management, photojournalism, public relations, research, and teaching. A core of courses totaling 22 semester hours is required of all students, leaving 8 to 12 hours for work in one or more of these nine areas of interest.

Bachelor of Science Degree, College of Communications and Fine Arts

The academic requirements for the Bachelor of Science degree in journalism include 30 to 34 hours in journalism as approved by the School of Journalism and 26 to 30 hours in junior-senior level class work in the College of Liberal Arts, the College of Science, or other areas approved by the faculty.

Students will also complete a 15-hour minor in an area approved by the School of Journalism. The minor must be declared by the time the student has accrued 90 semester hours. Students who select a minor within the College of Liberal Arts may include those hours in their 26-30 senior level hours.

General Studies Requirements	45
Requirements for a Major in Journalism	30-34
Journalism 300, 310, 370	9
Required for the Advertising Specialization:	
372, 374, 376, 479	12
or	
Required for the News-Editorial Specialization:	
311, 312, 442, and two of the following:	
390, 391, 411.....	13
Journalism electives to complete 30-34 hours	8-13
Minor	15
Approved electives	26-30
Total	120

PHOTOJOURNALISM SPECIALIZATION

A photojournalism specialization, administered jointly by the School of Journalism and the Department of Cinema and Photography, prepares students to become photographer-reporters and photo editors and to work in related positions in the mass media. Journalism majors enrolled in the specialization will be required to take the following courses: Journalism 300, 310, 311, 312 or 315, 313, 370, and 442; Cinema and Photography 407, and 408; plus six additional journalism hours for a total of 30-34.

Bachelor of Science Degree, College of Education

The student who plans to teach journalism must follow the program set forth by the College of Education, fulfill the requirements of the sequence of his choice in journalism, and complete Journalism 420 and 421. See Teacher Education Program, page 68.

Other Requirements

Journalism students must demonstrate a working knowledge of typewriting based upon a minimum rate of 30 words a minute. This proficiency must be demonstrated (by proof of a passing grade in a typing course or an examination given by the School of Journalism) before the student registers for Journalism 310. If the student cannot meet this requirement, he must enroll in Business Education 201 and receive a grade of *C* or better.

A student receiving a grade of *D* or lower in a journalism sequence course must repeat that course and receive a grade of *C* or better before advancing in that sequence.

Moderate fees will be assessed for supplies and materials in some courses.

Subject to the approval of the school's director, undergraduate students may receive as much as nine hours of journalism credit toward their degrees for courses not taken in residence.

Minor

A total of 15 hours of journalism courses constitutes a minor for non-journalism majors.

Courses

300-3 Mass Media in Modern Society. Develops an awareness of the pervasive nature of the mass media in our society and an understanding of how the media operate, with emphasis on contemporary social and economic problems in the media.

301-3 History of Journalism. Development of American newspapers, magazines, and radio-television with emphasis on struggle for freedom of the press, leading editors, and outstanding newspapers and periodicals. Modern investigative and activist reporting and underground and black press will be placed in historical perspective.

305-3 Introduction to Mass Communication Theory and Research. Overview of issues and concepts in mass communication today, development of problems from theory and practice. Introduction to language and basic techniques of survey and experimental research, including use of the computer for data processing.

310-3 Writing for the Mass Media. Study in the fundamentals of news writing, the techniques of news gathering and reporting, and the principles of editing with experience in the gathering, writing, rewriting, and editing of news copy. Prerequisite: typing speed of at least 30 words per minute.

311-3 Reporting and News Writing. Purposes and effects of different orientations to the information gathering and news writing processes; information sources, interviewing, writing, and editing practices; laboratory in reporting, writing, and editing for the news media. Prerequisite: 310.

312-3 Editing and Makeup. Principles of editing are combined with graphic concepts and techniques which interrelate printing processes, photography, writing of cutlines, picture page preparation, and page makeup, copyfitting, head schedules, newspaper organization, and the work flow on the ad and editorial sides. Prerequisite: 311.

313-3 Introduction to Photojournalism. (Same as Cinema and Photography 313.) Fundamentals of publications photography. Includes basic camera technique, black and white film and print processing methods, selection and display of photographs, and evaluation of pictorial communication effects. Student supplies own photographic materials and, where possible, an adjustable camera. Prerequisite: consent of department. Open only to journalism majors.

315-3 Graphic Communication. History of printing and typographic development, modern reproduction processes, technological developments, selection and use of appropriate graphic images in communication, and production techniques for publications. Materials costs under \$15.00 may be necessary.

340-2 Publicity Methods. Guidance and practice in writing for newspapers, magazines, and broadcast media about students' fields of specialization. Includes practical work as publicist for university and community groups. Non-majors only. Closed to students who have passed 310.

341-3 Public Relations. Current methods of planning and executing public relations policies, evaluating the media, and preparing campaigns. Promotional tools and press relations.

350-3 Community-Suburban Journalism. The small newspaper recognized as a distinct medium, performing a specialized function for its readers. Equal weight given to the problem of news presentation and to leadership with careful examination of news

and editorial policies of representative newspapers. Prerequisite: 311.

351-3 Community Newspaper Management. Organization, operation, and policy of the revenue departments of the community and suburban weekly and small daily newspapers with special attention to the circulation procedures, retail, general and classified advertising problems, and other phases of management. Prerequisite: 350.

360-3 Magazine Production and Design. The editorial and production functions of the magazine. Application of the principles of article and art layout to total editorial content. Printing production and selection of materials.

361-3 Specialized Publications. The function and operation of industrial, trade, business, professional, fraternal, literary, scholarly, and fad publications. Problems of management and production and the relationship of personnel through editorial policies and practices. Prerequisite: 360.

362-3 Magazine Article Writing. Investigation of free-lance and staff-written magazine articles with emphasis on the relationship between types of magazines and article content, research methods, and writing style. Two major articles of publishable quality required. Prerequisite: 311.

370-3 Principles of Advertising. An introduction to the processes of advertising and their functions in a marketing-communications environment; includes research, media, and message elements of advertising campaigns, governmental regulations, and social and economic considerations.

372-3 Advertising Media and Management. Analysis of economic, social, and marketing factors and their use in developing advertising objectives and strategies. Examination of mass media systems as vehicles of advertising communication and the planning, buying, and scheduling of advertising media programs. Prerequisite: 370, Marketing 304.

374-4 Advertising Copy, Layout, and Production. Examination and practice in the development of advertising message strategies and the writing and design of advertising messages for television, radio, newspaper, magazine, outdoor, direct mail, etc. Prerequisite: 372.

376-3 Advertising Campaigns. Application of advertising principles and techniques to the solution of a specific advertising problem facing a cooperating advertiser or advertising agency; problem analysis, development of strategy, media planning, message development, campaign presentation. One or two field trips, cost \$5.00 to \$10.00. Prerequisite: 374.

390-2 Critical and Persuasive Writing. The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style, and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: 311.

391-2 Feature Writing. Identification, research, and application of creative writing techniques with emphasis on newspaper articles. Analysis of reader appeal; study of feature story structure; development of style by practice in writing feature stories. Prerequisite: 311.

392-3 Cable Reporting. Researching, writing, and producing local news and public affairs presentation for CATV systems. Prerequisite: 310.

393-2 Cable Communication Systems Operations. The principles and practices of cable communication system management. Cable technology and economics involved in planning a cable system. The franchising system, local origination, and public access. Prerequisite: 392.

401-3 International Communication. An analysis of the development, structure, functions, and current status of media systems in other countries. Emphasis given to studying factors that facilitate or restrict the flow of intranational and international communication.

411-2 Public Affairs Reporting. Covering government and other public agencies, including the city hall, courts, county offices, business, finance, agriculture, labor, and other specialized beats. Prerequisite: 311.

420-3 School Publications. Designed for the prospective high school or junior college journalism teacher or publication director. Deals with practical production problems of school newspapers and yearbooks.

421-2 Teaching High School Journalism. Teaching methods of journalism in secondary schools, organization and course of study, bibliography, use of journalism courses for school publications production, exercises in creative classroom training, and developing examinations.

424-2 Workshop in Newspaper Analysis in the Classroom. Teachers from kindergarten through grade 12 in all subject areas are taught to use the newspaper in the classroom and present demonstrations of that proposed usage. Objectives are: background information on the American newspaper and its procedures; background of news to assist in interpretation; and use of the newspaper for classroom exercises. Summer only.

442-3 The Law of Journalism. Legal limitations and privileges affecting the mass media to include the law of libel, development of obscenity law, free press and fair trial, contempt of

court, right of privacy, advertising and antitrust regulations, copyright, and access to the press. Prerequisite: senior standing.

450-3 Mass Media Management. Basic economic and management theory and application of theory to the management process in the mass media. Individual projects involving analysis of management of a selected medium. Prerequisite: consent of instructor.

479-2 Social Issues and Advertising. Analysis of social issues involving advertising; economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international, and other problems and controversies. Prerequisite: senior standing.

490-1 to 6 (1 to 2, 1 to 2, 1 to 2) Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Prerequisite: written consent of instructor and area head.

494-1 to 3 Practicum. Study, observation, and participation in publication or broadcast activities. Not for graduate credit. Prerequisite: consent of instructor and area head.

495-1 to 12 (1 to 6, 1 to 6) Proseminar. Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Prerequisite: senior standing.

500-3 Research Methodology in Mass Communication I.

501-2 Research Methodology in Mass Communication II.

504-3 Foundations of Mass Communication Theory.

505-2 Theoretical Issues in Mass Communication.

510-2 Literature of Journalism.

511-3 Studies in Journalism History.

512-2 Press Freedom and Censorship.

520-2 Communication and National Development.

530-2 Historical Research in the Mass Media.

540-3 Legal and Governmental Research in the Mass Media.

550-1 to 12 (1 to 4, 1 to 4, 1 to 4) Topical Seminar.

592-1 to 6 (1 to 2, 1 to 2, 1 to 2) Individual Research.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Language Arts and Social Studies (Major)

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Language Arts and Social Studies</i>	45 ¹
Language Arts Requirements	24
GSD 101, 117, 153	(7)
GSC 200	(3)
GSC 365 or English 471 or 472	3
English 290, 300, 302, 309, 481	15
Secondary Education 340	3
Instructional Materials 406	3
Social Studies Requirements	21
GSB 300, 301, U.S. history	
elective	(6) + 3
World history, 205 plus three hours at	
300 or 400 level	6
GSB 212, Political Science 213	7
GSB 211 or an elective in either world history	
or political science	(3)
GSA 330, Geography 300	(3) + 3
GSB 203, 202, or 104	(3)
Secondary Education 488	2
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 68.	

<i>Electives</i>	6
Secondary Education 375, 406, 407, 470, or 485 strongly recommended.	
<i>Total</i>	120

¹Although the hours shown in parentheses are required for the major, they also will count toward the 45 hour requirement in General Studies.

Latin American Studies (Major)

Southern Illinois University at Carbondale traditionally has had a strong interest in Latin America. An unusually large number of faculty specialists offer many courses related to that region and Morris Library contains an outstanding collection of Latin American materials. The University initiated its Latin American Studies Program in 1958 to prepare students for careers in business, education, and government and to serve others who desired more information about the nations south of the United States. An interdisciplinary program, it includes training in language, the social sciences, and humanities. Beyond the minimum core of courses required for the major, maximum flexibility is provided to tailor the curriculum to the needs and interests of the individual student.

Latin American studies majors also complete a minor or other approved coherent program (usually 15 to 18 hours) in a standard discipline or career specialty.

The College of Liberal Arts grants the Bachelor of Arts degree with a major in Latin American studies. The Latin American studies advisory committee supervises the program. Interested students should consult the adviser for the Latin American studies major.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	(15)
<i>Requirements for Major in Latin American Studies</i>	35
Required Core Curriculum	20
History 370a, b	
Political Science 366	
Anthropology 310b or 310c	
Spanish 201a, b and 306	
Latin American Electives	15
Students may choose among 36 courses offered by nine departments to fulfill this requirement.	
<i>Minor (in fulfillment of supplementary college requirements)</i>	15-18
<i>Electives</i>	22-25
<i>Total</i>	120

Law Enforcement (Program, Major)

(ALSO SEE CORRECTIONAL SERVICES)

Law enforcement today demands a wide range of knowledge and ability to meet the complexities of modern society. This program is designed both for the individual

entering the profession and for persons already serving in law enforcement who wish to upgrade their skills.

The student in this program will not be taught “police skills” that are taught in a police academy, such as firearms or personal defense. He will learn methods of crime control, criminal behavior, methods of crime detection, community problems in law enforcement, criminal law, and police administration. He will develop an understanding of people and of interpersonal relationships.

The student will spend one term prior to graduation working under supervision with a police agency.

Police officers may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their duty schedules.

Full transfer of credit is guaranteed to students who have completed certificate programs in law enforcement at cooperating community colleges.

An advisory committee made up of persons active in law enforcement assists the program. Current members are: Joseph E. Ziel, special agent in charge, Federal Bureau of Investigation, Springfield; Capt. Joe Ginter, commanding officer, Illinois State Police District 13, DuQuoin; W. Charles Grace, Jackson County Public Defender, Murphysboro; Howard Hood, Jackson County State’s Attorney, Murphysboro; George Kennedy, chief of police, Carbondale; and James Rush, director of criminal justice planning, Greater Egypt Regional Planning and Development Commission, Carbondale.

This associate degree can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Law Enforcement

GSB 202, 203, 212	11
GSD 101, 153	5
Political Science 213	3
School of Technical Careers 102	2
Sociology 372	4
Correctional Services/Law Enforcement 103, 105, 107, 115, 205, 209, 210, 215, 220, 221	37
Electives	4
<hr/> Total	66

(SEE COURSES UNDER CORRECTIONAL SERVICES/LAW ENFORCEMENT)

Liberal Arts (College, Courses)

Courses

258-1 to 30 Work Experience. For giving elective credit for work experience related to liberal arts subjects when credit has been established by department evaluation.

259-2 to 45 Transfer Credit. For transfer of elective credits in liberal arts subjects when credit has been established by department evaluation. Prerequisite: junior standing.

300-1 to 3 Individual Interdisciplinary Readings. Readings of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 301 and/or 302 beyond a total of three hours per semester requires the dean’s permission. Prerequisite: advance approval by the dean.

301-1 to 3 Individual Interdisciplinary Research. Research of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines.

Concurrent registration in 300 and/or 302 beyond a total of three hours per semester requires the dean's permission. Prerequisite: advance approval by the dean.

302-1 to 3 Individual Interdisciplinary Field Study. Field study of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 300 and/or 301 beyond a total of three hours per semester requires the dean's permission. Prerequisite: advance approval by the dean.

303-1 to 9 (1 to 3 per semester) Interdisciplinary Studies. Offered in a variety of forms, including lectures, readings, research, or field study. Initiated by at least two faculty members from different departments. Approval by the dean is required during the semester prior to its offering. May be repeated to a total of nine credits. Elective Pass/Fail.

Linguistics (Department, Major, Courses)

The objective of the undergraduate major in linguistics is to provide broad, general training in theoretical and applied linguistics. The major is designed to help the student achieve an awareness of the language systems of the past, an appreciation of his fellow man's modes of communication, and a fundamental understanding of the ever-changing linguistic environment in which he lives. Moreover, the analytical models of linguistics have, since the 1930's been recognized by other disciplines (notably anthropology, psychology, and sociology) as significant research paradigms: education in linguistic methods trains a student to think analytically, to evaluate hypotheses, and to propose new solutions.

The major in linguistics consists of 32 semester hours comprising: (1) 17 semester hours in a core of basic courses in general theoretical linguistics, 300, 301, 402a, 405, 408; (2) a 3-semester hour requirement in applied linguistics, at least one course from among 404, 415, 453; (3) a 3-semester hour requirement in the history and structure of one of the world's languages or language families, one course from among 430, 450; and (4) 9-semester hours of departmental electives chosen from any of the courses listed in (2) or (3) not used to satisfy those requirements, or any of the following, 402b, 403, 420, 431, 440, 497.

There is a foreign language requirement, potentially overlapping to satisfy College of Liberal Arts requirements, as follows: (1) one year of an uncommon or non-Western language, (2) two years of any foreign language. If the language in (2) were uncommon or non-Western, satisfying (2) would automatically satisfy (1). Students planning graduate study in linguistics should take three years of foreign language study.

In addition, there is a flexible cognate area requirement, also potentially overlapping to satisfy College of Liberal Arts requirements, which allows the student to pursue his individual linguistic interests outside the Department of Linguistics. In consultation with his departmental adviser, the student elects a minimum of 12 semester hours of linguistically-relevant courses offered by other departments. A second major in one of the following linguistically-related fields may substitute for the cognate area requirement: English, foreign languages, philosophy, anthropology, mathematics, speech, speech pathology and audiology, psychology, sociology.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>College of Liberal Arts Requirements</i>	15
<i>Requirements for Major in Linguistics</i>	32
Core Courses: 300, 301, 402a, 405, 408	17

Applied Linguistics: one of the following: 404, 415, 453	3
World's languages: one of the following: 430, 450	3
Departmental electives: at least 9 hours chosen from any course listed above not used to satisfy those requirements or chosen from the following: 402b, 403, 420, 431, 440, 497	9
Cognate area requirements (overlapping with College requirements)	12
Foreign language requirement (overlapping with College requirements)	10-16
Electives	0-6
Total	120

Minor

The Department of Linguistics offers two minors: one in linguistics and one in uncommon languages.

The minor in linguistics (a minimum of 15 hours) draws upon the basic courses of the Department of Linguistics. It introduces the student to the structure of language, the historical development of languages, and the relation of language to the rest of culture. A minor in linguistics would be of special interest to students in anthropology, computer science, English, foreign languages and literatures, mathematics, philosophy, psychology, sociology, speech, and speech pathology and audiology.

Requirements for the minor in linguistics: (1) 300; (2) at least two courses (6-8 hours) from among the following: 301, 402a, 403, 405, 408; (3) additional courses from among the following to complete at least 15 hours: 402b, 402c, 404, 415, 430, 431, 440, 450, 453, 497.

The minor in uncommon languages consists of a minimum of 15 hours at 200-level or above of an uncommon language offered by the Department of Linguistics. For specific languages, see course offerings.

Students interested in linguistics should also consider taking GSD 104 or GSB 330 to help satisfy the General Studies requirements.

Courses

100-6 (3, 3) Oral English for Foreign Students. Four class hours of oral English and one hour in-class composition. An elective for foreign students admitted to the University in a graduate or undergraduate program. Cannot substitute for Linguistics 101, 102, or 103, but may be taken concurrently. May be taken singly.

101-3 Basic English Composition for Foreign Students. Instruction in the basic methods of English composition, focusing on the particular problems of foreign students. Techniques of analyzing, summarizing, outlining, documenting, synthesizing, and revising. Basic English grammar relevant to composition problems of foreign students. Equivalent to GSD 101. Limited to foreign students selected by proficiency exam on entrance.

102-2 Expository Writing for Foreign Students. Principles of expository essay style; study and practice in various techniques of expository writing. Directed at the particular problems of foreign students. Advanced study of English grammatical structures. Equivalent to GSD 117. Limited to foreign students. Prerequisite: 101 or equivalent.

103-2 Technical Writing for Foreign Students. Principles of scientific and technical writing in English as a second language. Study and practice of the techniques of technical report writing. Directed at the particular problems of foreign students. Advanced study of grammatical tools and organization required for technical prose. Equivalent to GSD 118. Limited to foreign students. Prerequisite: 101 or equivalent.

210-10 (5, 5) Elementary Uncommon Languages. Introduction to the basic skills of listening, speaking, reading, writing, and the fundamentals of grammar. Must be taken

in sequence. (a-b) Arabic, (c-d) Hebrew, (e-f) Persian, (g-h) Vietnamese, (i-j) Lao, (k-l) Cambodian.

300-3 Introduction to Descriptive Linguistics. An introductory survey of synchronic, descriptive linguistics: assumptions, methods, goals, terminology, and data manipulation. Elective Pass/Fail.

301-3 Introduction to Historical and Comparative Linguistics. An introductory survey of historical and comparative linguistics: assumptions, methods, goals, terminology, and data manipulation. Elective Pass/Fail.

321-3 Survey of Vietnamese Literature. (See Asian Studies 321.)

401-4 General Linguistics. Basic concepts and methods of general linguistics. Fundamentals of the nature, structure, and functioning of language. Data manipulation and problem solving. Elective Pass/Fail.

402-7 (3, 3, 1) Phonetics. (a) Theory and practice of articulatory phonetics. (b) Theory and practice of instrumental phonetics. Prerequisite: 402a. (c) Transcription laboratory. Prerequisite: 402a. May be taken singly. Elective Pass/Fail.

403-3 English Phonology. Study of English phonology, both American and British, including phonetics, phonemics, and prosodics. Prerequisite: 300 or 401, and 402a, or consent of department. Elective Pass/Fail.

404-3 American Dialects. Regional variation and social stratification of American English. Phonological and syntactic differences among the major dialects of American English. Prerequisite: one previous course in linguistics. Elective Pass/Fail.

405-4 Phonological Theory. Survey of pre-structural, structural (both American and European), distinctive feature, stratificational and generative phonological theories; phonological universals. Data manipulation and problem solving. Prerequisite: 300 or 401, and 402a. Elective Pass/Fail.

408-4 Syntactic Theory. Basic concepts and formalisms of transformational generative grammar. Data manipulation and problem-solving in English syntax. Prerequisite: 300 or 401, or consent of department. Elective Pass/Fail.

410-10 (5, 5) Intermediate Uncommon Languages. Review of the structure of modern spoken language. Introduction to written language. Emphasis on conversational style. The first semester carries undergraduate credit only. (g-h) Vietnamese, (i-j) Lao, (k-l) Cambodian. Prerequisite: 210 or equivalent.

411-3 The Linguistic Structure of Chinese. (See Chinese 410.)

412-3 The Linguistic Structure of Japanese. (See Japanese 410.)

415-3 Sociolinguistics. History, methodology, and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, marginal languages, and language planning. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.

420-8 (4, 4) Advanced Uncommon Languages. Advanced conversation and reading of third-year level materials in preparation for classes conducted in the language. (g-h) Vietnamese, (i-j) Lao, (k-l) Cambodian. Prerequisite: 410 or equivalent.

422-3 Contemporary Vietnamese Prose. Open to advanced students. Short stories, novels, and essays (main trends and evolution). Emphasis on works of prominent authors since 1920, such as Nguyen V. Vinh, Pham Quynh, H. N. Phach, Nguyen T. Thuat, P. K. Binh, Khai Hung, and the recent generation. Prerequisite: 321 or Asian Studies 321 and Linguistics 410.

423-2 Vietnamese Poetry. Classical and modern poetry. Emphasis on masterpieces and leading figures such as Nguyen Trai, Nguyen Binh Khiem, the authors of Chinh Phu Ngam and Cung Oan, Nguyen Huy Tu, Nguyen Du and the Kim Van Kieu, Nguyen Cong Tru, and the new poetry with the impact foreign poetry had on it. Prerequisite: 321 or Asian Studies 321 and Linguistics 410.

424-2 Modern Vietnamese Drama. Hat boi (Vietnamese Opera), Hat cheo (Popular Theater from North Vietnam), Cai luong (Modernized Opera and Musical), Thoai kich (Modern Theater), and Kich tho (Lyric Theater). Emphasis on the main plays, the stage techniques, and the literary and social meaning of those various forms of Vietnamese theater. Prerequisite: 321 or Asian Studies 321 and Linguistics 410.

430-3 to 6 (3, 3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.

431-3 Structure of the English Verb. An analysis of the English verb system. Special study of the modals and non-finites. Elective Pass/Fail.

440-3 to 6 (3, 3) Topics in Linguistics. Selected topics in theoretical and applied linguistics. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.

450-3 to 6 (3, 3) Language Families. A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of

department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.

453-3 Methods in Teaching English as a Second Language. Survey of general principles of second-language teaching as applied to English. Individual observation and practice in ESL/EFL classwork. Elective Pass/Fail.

497-1 to 8 Readings in Linguistics. Directed readings in selected topics. Prerequisite: consent of department and undergraduate status.

501-3 Contrastive Linguistics.

504-3 Dialectology.

506-4 Historical Linguistics.

510-3 History of Linguistics.

530-3 to 6 (3, 3) Historical Grammatical Structures.

540-1 to 12 (1 to 3 per topic) Studies in Linguistics.

550-8 (4, 4) Seminar in Linguistics.

570-3 Theory and Methods of EFL/ESL.

571-2 Language Laboratories in EFL/ESL.

572-2 Materials Preparation in EFL/ESL.

580-3 Seminar in Special Problems of EFL/ESL.

581-4 (2, 2) Practicum in EFL/ESL: Oral English.

585-4 (2, 2) Practicum in EFL/ESL: Written English.

596-3 Stylistics.

597-1 to 8 Readings in Linguistics.

599-1 to 6 Thesis.

Marketing (Department, Major, Courses)

Marketing deals with all activities required to link production of goods and services with their use. The emphasis in all courses is upon the development of an analytical approach to the creative solution of marketing problems. The department will assist students in arranging suitable course sequences to prepare for careers in such fields as retailing, sales management, industrial marketing, physical distribution, promotional management, international marketing, and marketing administration.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45
<i>Professional Business Core (see page 64)</i>	47
<i>Requirements for Major in Marketing</i>	21
Marketing 329, 363, 390, 493	12
Marketing Electives	9
<i>Electives</i>	7
<i>Total</i>	120

Courses

304-3 Marketing Management. Management of the firm's marketing function within a dynamic operating environment. Includes study of such functions as product development, promotion, channel selection, logistics and market research. Prerequisite: one course in accounting and one course in economics.

305-3 Behavioral and Social Aspects of Marketing. Examines underlying psychological, sociological, and economic factors which influence consumer behavior. Studies the impact of marketing activities on society, consumerism and legislation effecting the marketplace.

329-3 Marketing Channels. The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is upon the ways in which certain basic distribution functions are carried out in an integrated channel system. The role of a variety of manufacturers, wholesalers and retailers as parts of this system is analyzed. Prerequisite: 304.

335-3 International Marketing. Analysis of international operations. Emphasis on

the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms. Prerequisite: 304 or consent of instructor.

341-3 Transportation. Organization and economic aspects of the United States transportation system including rail, highway, air, pipeline, and water transportation. Regulatory problems of transportation. Current transportation developments and situations. Prerequisite: 304.

363-3 Promotional Concepts. The role of promotional activities in the firm's marketing function—advertising, personal selling, sales promotion and publicity. The relationship of consumer behavior to the area of promotion. Prerequisite: 304.

390-3 Marketing Research and Analysis. The basic procedures and theories appropriate to solving various types of marketing problems in the context of business organization and decision models. Prerequisite: 304 and Administrative Sciences 208.

401-3 Retail Management. Designed to present the basic principles in decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. Retail merchandising through a managerial perspective. Prerequisite: 304.

438-3 Sales Management. Analysis of the management of the sales effort within the marketing system. Philosophies, concepts, and judgement criteria of the sales function in relationship to the total marketing program. Prerequisite: 304.

439-3 Industrial Marketing. Analysis of decision criteria related to the marketing of industrial products. Emphasis on program development, formulation of a marketing mix, and the behavioral relationships in the modern industrial organization. Prerequisite: 304.

452-3 Physical Distribution Management. Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization, and management of the system. Prerequisite: 304.

463-3 Advertising Management. Advertising from the viewpoint of business management. Develops an understanding of the role of advertising under various conditions. Problems of integrating advertising strategy into the firm's total marketing program. Prerequisite: 304.

493-3 Marketing Policies. A comprehensive and integrative view of marketing policy formulation. Marketing decisions analyzed and discussed. Prerequisite: 329, 363, and 390. Not more than one to be taken concurrently.

495-3 Quantitative Techniques in Marketing. An introduction to and survey of mathematical tools of decision making in marketing situations. Application of these techniques to the analysis of marketing problems is emphasized. Prerequisite: 304 and Mathematics 117 or 140.

499-1 to 6 (1 to 3, 1 to 3) Marketing Insights. Provides the student an opportunity to participate in an internship program, independent study, or seminar coinciding with his areas of interest. May be repeated for credit only when topics vary. Prerequisite: approval of the department chairman in the semester prior to enrollment.

Mathematics (Department, Major, Courses)

Students intending to major in mathematics must plan schedules of mathematics courses numbered above 299 with a mathematics adviser. At least a C is required in all mathematics courses used to satisfy departmental requirements.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements	15
Requirements for Major in Mathematics	44
Mathematics 150 (151 or 159 may substitute), 250	
(259 may substitute), 251 221	(4) + 10
Computer Science 202	3
Mathematics electives: seven courses at the 300-400 level, of	
which at least four are at the 400 level, excluding 308, 309,	
311, 313, 400, 411, 432, but including 319	
(or 419) and 352 (or 452)	21

Foreign language (French, German, or Russian recommended)	(4) + 4
Six hours ¹ in one of the following areas, selection to be after the approval of the department: (a) engineering, (b) computer science, (c) any department in the College of Science, (d) economics, (e) College of Business and Administration	6
Electives	16
Total	120

¹If taken as a minor, these hours may, with approval of the dean of the College of Liberal Arts, count under the Supplementary College Requirements.

Bachelor of Science Degree, College of Science

General Studies Requirements	45 ¹
College of Science Requirements	12
English Composition	(3)
Speech	(2)
Writing Course	(2)
Foreign Language (listed under major)	
Biological Sciences (not General Studies)	6
Physical Sciences (not General Studies)	6
Requirements for Major in Mathematics	38
Mathematics 150 (151 or 159 may substitute), 250 (259 may substitute), 251, 221	(4) + 10
Computer Science 202	3
Mathematics electives: seven courses at the 300-400 level, of which at least four are at the 400 level, excluding 308, 309, 311, 313, 400, 411, 432, but including 319 (or 419) and 352 (or 452)	21
Foreign language (French, German, or Russian recommended)	(4) + 4
Electives	25
Total	120

¹The 45 hour requirement may be reduced by taking College of Science requirements which are approved substitutes for General Studies courses.

Bachelor of Science Degree, College of Education

Students in the College of Education with a major in mathematics must plan schedules of mathematics courses numbered above 199 with a mathematics adviser. Grades must be at least a C in mathematics courses numbered 150 or above used to satisfy these requirements.

General Studies Requirements	45 ¹
Requirements for Major in Mathematics	32-33
Mathematics 150 (151 or 159 may substitute), 250 (259 may substitute)	(4) + 4

Mathematics 221	3
A student may take some of the above courses by proficiency examination, or he may substitute honors calculus for calculus.	
Computer Science 202	3
Mathematics 311, 319, (or 419), 335, and 352 (or 452)	12
Mathematics 319E and 352E	2
At least 3 additional mathematics courses numbered above 399	8-9
<i>Professional Education Requirement</i>	24
See Teacher Education Program, page 68.	
<i>Electives</i>	18-19
<i>Total</i>	120

¹See catalog section titled Secondary Education for specific certification requirements.

Unconditional admission into the Teacher Education Program in mathematics requires a 2.5 average in mathematics courses numbered above 149, including a grade of C or better in at least two mathematics courses numbered above 299 (not including Mathematics 308, 309, 311, 313, 400, 411, or 432 or courses formerly numbered 321, 410, 411, 412.)

Approval for student teaching requires a grade of C or better in Mathematics 311 and a 2.25 average in mathematics courses numbered above 299, including a grade of C or better in at least four other mathematics courses (not including Mathematics 308, 309, 313, 400, 411, or 432 or courses formerly numbered 321, 410, 411, 412). Students with a minor in mathematics must also meet this requirement to student teach in mathematics.

Minor

The non-teaching minor consists of 15 hours of mathematics (exclusive of General Studies courses and Mathematics 308, 309, 311, and 432.) Only 7 hours will be allowed for Mathematics 116, 117 to meet this requirement and at least a C is required in all mathematics courses used to meet this requirement. Additional hours are required for teacher certification on the secondary level in Illinois. Courses to be selected in consultation with a mathematics department adviser.

Honors

Mathematics 159 and 259 provide honors material in calculus and analytic geometry for properly qualified freshman and sophomore students. Mathematics 395 and 495 are used for individual honors work for upper level undergraduates in mathematics.

Courses

- 101-1 Mathematics Review for Pre-Law.** Sample questions and problems related to mathematics and law school admission examinations. Fall only. Two hours weekly for half-semester. Mandatory Pass/Fail.
- 110-5 (3, 2) College Algebra and Trigonometry.** A two-semester sequence version of the course Mathematics 111. Students with two or more years of high school algebra and no trigonometry should begin with 110b. Credit is not given for both 110 and 111. Prerequisite: GSD 107 or one and one-half years of high school algebra or the equivalent. Elective Pass/Fail.

111-5 College Algebra and Trigonometry. For students with one and one-half years of high school algebra who intend to take 150. The algebra of functions; exponential, logarithmic, and trigonometric functions; functions of two variables. Credit is not given for both 110 and 111. Prerequisite: GSD 107 or one and one-half years of high school algebra or the equivalent. Elective Pass/Fail.

116-5 Finite Mathematics and Algebra. Topics from intermediate algebra and college algebra, systems of linear equations, matrix algebra, Gauss-Jordan row reduction, elementary probability theory, emphasis on business applications. Credit is not given for both 116 and 139. This course can be used to satisfy the mathematics requirement in General Studies. Prerequisite: one year of high school algebra or GSD 106. Elective Pass/Fail.

117-4 Finite Mathematics and Calculus. A continuation of 116. Linear programming, Markov chains, elementary differential calculus, max-min problems emphasizing business applications, partial derivatives, elementary integral calculus with applications in economics. Credit is not given for both 117 and 139 or for 117 and 140. Prerequisite: 116. Elective Pass/Fail.

139-3 Finite Mathematics. Set concepts and operations, combinations, permutations, elementary probability theory including Bayes formula, linear systems of equations, matrix algebra, Gauss-Jordan row reduction, introduction to linear programming. Credit is not given for both 116 and 139 nor for 117 and 139. Prerequisite: GSD 107 or one and one-half years of high school algebra. Elective Pass/Fail.

140-4 Short Course in Calculus. Techniques of differentiation, increasing and decreasing functions, curve sketching, max-min problems in business and social science; partial derivatives, Lagrange multipliers, elementary techniques of integration. Credit is not given for both 117 and 140. Prerequisite: GSD 107 or one and one-half years of high school algebra. Elective Pass/Fail.

150-4 Calculus I. Treatment of the major concepts and techniques of single-variable calculus, with careful statements but few proofs. Differential and integral calculus of the elementary functions with associated analytic geometry. Students interested in honors credit should see Mathematics 159. Prerequisite: 111 or equivalent. Elective Pass/Fail.

151-5 Calculus I with Algebra. This version of Mathematics 150 is made available so that a student intending to major in mathematics (in either Liberal Arts or the College of Education) can begin the calculus in his first semester. Credit is not given for both 150 and 151 nor for both 159 and 151. Prerequisite: three years of high school mathematics including two years of algebra and approximately one-third year of trigonometry, an ACT score greater than 50, or consent of department.

159-4 Honors Calculus I. Honors version of 150. Careful treatment of the major concepts and techniques of single-variable calculus. Credit is not given for both 150 and 159. Prerequisite: consent of department.

221-3 Introduction to Linear Algebra. Vector spaces, linear functions, systems of equations, dimensions, determinants, eigenvalues, quadratic forms. Prerequisite: 150. Elective Pass/Fail.

250-4 Calculus II. Develops the techniques of single-variable calculus begun in Calculus I and extends the concepts of function, limit, derivative, and integral to functions of more than one variable. The treatment is intuitive, as in Calculus I. Techniques of integration, introduction to multivariate calculus, elements of differential equations. Students interested in honors credit should see Mathematics 259. Prerequisite: 150. Elective Pass/Fail.

251-3 Calculus III. Further topics in calculus. Definite integrals over solid regions, applications of partial derivatives, vectors and vector operators, derivative of vector function, line integrals, Green's theorem. Prerequisite: 250. Elective Pass/Fail.

258-1 to 12 Work Experience. As an instructional aide, the student will do tutoring under the direction of an established teacher and under the supervision of a representative of the Department of Mathematics. Prerequisite: consent of department. Mandatory Pass/Fail.

259-4 Honors Calculus II. An honors version of 250. Develops the techniques of single-variable calculus and extends the concepts of function, limit, derivative, and integral to functions of more than one variable. Credit is not given for both 250 and 259. Prerequisite: 159 or consent of department.

280-3 Introduction to Probability Theory. Probability as a mathematical system, random variables and their distributions, limit theorems, topics in statistical inference. Prerequisite: 150 (250 recommended). Elective Pass/Fail.

282-3 Introduction to Statistics. Designed to introduce beginning students to basic concepts, techniques, and application of statistics. Topics to include the following: organization and display of data, summation notation, measure and dispersion, permutations, combinations and elementary probability, binomial, normal and Poisson distribution, random sampling, hypothesis testing, student t-distribution, correlation and regression, nonparametric statistics, Chi-square distribution. Prerequisite: three semester hours of college mathematics beyond general studies mathematics; e.g., any of the following

courses: 111, 117, or 139 would satisfy the prerequisite. Elective Pass/Fail.

283-3 Introduction to Applied Statistics. Experiment motivated in that the statistical concepts are developed to answer questions that arise from experiments that the class performs. Statistical concepts discussed are descriptive statistics, sampling distributions, expectation, correlation, probability sampling, randomization and control in experimentation, least squares estimation, confidence intervals, nonparametric tests. Also the student is given experience in writing up experiments. Prerequisite: 140 or equivalent. Elective Pass/Fail.

301-3 Introduction to Discrete Structures. (Same as Computer Science 342.) Sets and set operations. Functions and their properties. Binary relations including equivalence relations and order relations. Relational systems including monoids and graphs. Applications to computer science. Prerequisite: 111 or consent of department.

305-3 Introduction to Ordinary Differential Equations I. Solution techniques for differential equations with emphasis on second order equations, applications to physical sciences, numerical methods. Prerequisite: 250. Elective Pass/Fail.

306-3 Introduction to Ordinary Differential Equations II. Laplace transforms and Fourier series with applications to ordinary and partial differential equations. Systems of first order differential equations, stability. Prerequisite: 305 and 221. Elective Pass/Fail.

308-3 Mathematics for Elementary Teachers I. Whole numbers, integers, rational numbers, and real numbers; other numeration systems; the laws of arithmetic; algorithms. For elementary education majors only. Prerequisite: three hours of college mathematics. Elective Pass/Fail.

309-2 Mathematics for Elementary Teachers II. Geometric transformations, congruence, symmetry, similarity, area and volume, spherical geometry, and applications as found in the elementary school curriculum. May not be used to satisfy requirements for a mathematics major. Elective Pass/Fail.

311-3 Teaching of Secondary Mathematics. The nature and objectives of the secondary mathematics curriculum. Particular attention is given to the means of introducing new ideas into the high school program. For students preparing to be certified teachers of secondary mathematics. Three lectures and two laboratory hours per week. Does not count toward a mathematics major for Bachelor of Arts degree students. Prerequisite: 319, 319E, and 335.

313-3 Mathematical Insights. Introduction to the conceptual aspects of modern mathematics. Starting with simple questions about such things as sets, area, and games, the student is lead to an appreciation of the necessity for preciseness in a mathematical theory. Prerequisite: completion of the general studies mathematics requirement. Elective Pass/Fail.

319-3 Introduction to Abstract Algebra. Basic properties of groups and rings: Binary operations, groups, subgroups, permutations, cyclic groups, iso-morphisms, Cayley's theorem, direct products, cosets, normal subgroups, factor groups, homomorphisms, rings, integral domains. Prerequisite: 250; plus for secondary education majors, concurrent enrollment in 319E. Elective Pass/Fail.

319E-1 Modern Algebra as Applied to the Secondary Schools. Two hours per week. The applicability of the concepts of modern algebra, particularly the field axioms and the function concept, to the secondary curriculum. Prerequisite: concurrent enrollment in 319. Elective Pass/Fail.

325-3 Introduction to Number Theory. Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations. Prerequisite: 111. Elective Pass/Fail.

335-3 Concepts of Geometry. An elementary introduction to various geometric systems to acquaint the student with the inter-relationship between geometries of current interest. Topics include axiom systems, absolute plane geometry, Euclidean geometry, and non-Euclidean geometry. Prerequisite: 221 or 250. Elective Pass/Fail.

351-3 Vector Analysis. The algebra of vectors; vector valued functions; the gradient, divergence, and curl operators in cartesian coordinates; volume, surface, and line integrals; the Gauss and Stoke's theorems; Green's identities; curvilinear coordinates and coordinate transformations; coordinate-free definitions for the gradient, divergence, curl, and Laplacian operators; invariance properties of these operators. Prerequisite: 250. Elective Pass/Fail.

352-3 Introduction to Analysis. A rigorous treatment of concepts introduced in elementary calculus, such as real number system, limits and continuity, derivatives, integration, transcendental functions. Prerequisite: 250; plus for secondary education majors, concurrent enrollment in 352E. Elective Pass/Fail.

352E-1 Analysis as Applied to the Secondary Schools. Two hours per week. Sequences, series, infinite decimals, continuity. Applications to the secondary curriculum. Prerequisite: concurrent enrollment in 352. Elective Pass/Fail.

361-3 Numerical Calculus. (See Computer Science 361.)

395-1 to 6 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 3.00 grade point average in mathematics and consent of chairman.

400-2 History of Mathematics. An introduction to the development of major mathematical concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in mathematics from 600 B.C. Prerequisite: 319 and 352 or consent of instructor. Elective Pass/Fail.

405-3 Intermediate Ordinary Differential Equations. Topics selected from linear systems, existence and uniqueness for initial value and boundary value problems, oscillation, and stability. Prerequisite: 306. Elective Pass/Fail.

406-3 Eigenfunction Methods in Applied Mathematics. Inner product spaces; orthonormal systems; Bessel's inequality; quadratic forms; Hermitian operators; eigenfunctions and eigenvalues; minimization properties of eigenfunctions; the spectral theorem for a Hermitian matrix; functions of matrices; Sturm-Liouville differential operators; convergence properties of Fourier Series; the Legendre, Laguerre, Hermite, and Tchebycheff families of orthogonal polynomials; functions of a Sturm-Liouville operator; Green's functions; the Laplacian operator in 1, 2, and 3 dimensions. Prerequisite: 221 and 305. Elective Pass/Fail.

407-3 Introduction to Partial Differential Equations. First order linear and quasilinear partial differential equations, characteristics, second order linear partial differential equations, classification of types, boundary value and initial value problems, well posed problems, the wave equation, domain of dependence, range of influence, Laplace's equation and Dirichlet problems, the maximum principle, Poisson's integral, fundamental solution of the heat equation. Prerequisite: 305. Elective Pass/Fail.

411-1 to 6 (1 to 3), (1 to 3) Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major. Elective Pass/Fail.

417-3 Applied Matrix Theory. Matrix algebra and simple applications, simultaneous linear equations, linear dependence and independence of vectors, rank and inverses, determinants, eigenvalues and eigenvectors, quadratic forms, applications. This course may not be counted toward a graduate degree in mathematics. Prerequisite: 139 or 221 or consent of department. Elective Pass/Fail.

419-4 Algebraic Structures I. Groups, subgroups, normal subgroups and homomorphism theorems, permutation groups, finite direct products, finite abelian groups, p-groups and Sylow's theorem, normal and subnormal series, Jordan Holder theorem. Rings and subrings, divisibility theory in integral domain, polynomial rings. Prerequisite: 319 or consent of department. Elective Pass/Fail.

421-3 Linear Algebra. Fields, vector spaces over fields, triangular and Jordan forms of matrices, dual spaces and tensor products, bilinear forms, inner product spaces. Prerequisite: 221. Elective Pass/Fail.

425-3 Theory of Numbers. Selected topics from number theory. Prerequisite: 325 or consent of department. Elective Pass/Fail.

426-3 Introduction to Mathematical Logic. (Same as Philosophy 426.) General introduction to the method of mathematical logic, forming of denials, the statement calculus including the deduction and completeness (with respect to truth tables) theorems, and the predicate calculus including the deduction theorem, deduction techniques; (in the predicate calculus) normal forms and equality, first order theories, first order number theory, consistency, truth (in the model-theoretic sense), completeness theorem (with respect to the model-theoretic definition of validity), independence, categoricity, decidability, and a brief introduction to Gödel's theorem. Prerequisite: 301, 319, or 352. Elective Pass/Fail.

430-3 Projective Geometry. Introduction to plane projective geometry. Study of the extended Euclidean plane as well as such topics as perspectivities, projectivities, involutions, cross ratios, and conics. An axiomatic foundation for projective geometry is included in the course. Prerequisite: 221 and 251. Elective Pass/Fail.

432-4 Philosophy of Mathematics. (See Philosophy 432.) Prerequisite: Philosophy 320 or 15 hours of mathematics. Elective Pass/Fail.

433-3 Introduction to Topology. Study of continuity, convergence, compactness, and completeness in the context of metric spaces. Prerequisite: 352 or consent of department. Elective Pass/Fail.

435-3 Elementary Differential Geometry. This course will consist of classical differential geometry of curves from the modern viewpoint with emphasis on the Frenet-Serret formulas and will deal with geometric aspects of surfaces motivated by the theory of curves. Topics will include: basic definitions of manifolds; manifolds with a linear connection; Riemannian geometry; sub-manifolds of R^n with emphasis on (Gaussian and Riemannian) curvature. Prerequisite: 251 and 221. Elective Pass/Fail.

437-3 Elementary Algebraic Topology. Topological spaces; continuous maps. Finite products. Connectivity. Path connectivity. Compactness. Local compactness. Separation axioms. Two-dimensional manifolds; Orientable vs. non-orientable manifolds. Statement of the classification theorem for compact surfaces. Triangulations of compact surfaces. Euler characteristic. Manifolds with boundary. Classification of compact, connected 2-manifolds with boundary. Homotopic functions: Homotopic paths. Fundamental group. The fundamental group of the circle. Brouwer fixed-point theorem in dimension 2. Fundamental group of a product. Covering spaces: path lifting property. The lifting theorem for arbitrary maps. The homotopy lifting property. Prerequisite: 319. Elective Pass/Fail.

445-3 Applied Boolean Algebra. (Same as Computer Science 445.) Boolean algebras with applications to logic and circuit theory. Simplification algorithms. Sequential circuits and sequential machines. Prerequisite: 301 or Computer Science 342, or Mathematics 319.

449-3 Combinatorics and Graph Theory. (Same as Computer Science 449.) An introduction to graph theory and combinatorial mathematics with computing applications. Topics include permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory, block designs. Prerequisite: 301 and Computer Science 202.

451-3 Introduction to the Theory of Computation. (See Computer Science 451.)

452-4 Advanced Calculus. Fundamental concepts of analysis; infinite series, functions and series of functions, uniform convergence, functions of bounded variation, Riemann-Stieltjes integral, functions of several variables, implicit functions and extreme values. Prerequisite: 352 or consent of department. Elective Pass/Fail.

455-3 Introduction to Complex Analysis and Applications. Complex numbers, analytic functions, line integrals, the Cauchy-Goursat theorem and its implications, power series, Laurent series, polar and essential singularities, analytic continuation, contour integration, and the residue theorem, conformal mapping, asymptotic expansions. Prerequisite: 251. Elective Pass/Fail.

457-5 Methods of Quantitative Analysis. (Same as Business Administration 451.) Introductory survey of basic quantitative methods necessary for graduate study in business; designed for students with deficiencies in methods of quantitative analysis. Course consists of introduction to calculus, matrix algebra, and probability. Extensive use is made of business examples. Prerequisite: enrollment in Master of Business Administration program or consent of instructor.

460-3 Transformation Geometry. Geometry as the study of properties invariant under congruences, similarities, affine transformations, and projectivities. Prerequisite: 221, 319, 335. Elective Pass/Fail.

471-3 Introduction to Optimization Techniques. (Same as Computer Science 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 221, 250, Computer Science 202.

472-3 Linear Programming. (Same as Computer Science 472.) Development of the simplex method. Design of models. Introduction to duality theory. Transportation problems. Network flow problems. Postoptimality problems. Applications. Prerequisite: 139 or 221; and Computer Science 202.

473-3 Reliability Theory. Formulation of the concept of reliability in terms of probability theory. Failure distributions and failure rates. Elements of renewal theory. Age and block replacement policies, optimal replacement policies for classes of failure distributions. Prerequisite: consent of department. Elective Pass/Fail.

475-6 (3, 3) Numerical Analysis. (Same as Computer Science 464.) An introduction to the theory and practice of computation with special emphasis on methods useful with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Must be taken in a,b sequence. Prerequisite: 221, 250, Computer Science 202.

480-4 Introduction to Probability. This is a comprehensive introduction to probability theory at a level suited to most upper division undergraduates and first year graduate students. Topics include: event spaces, probability functions, combinatorics, generating functions, conditional probability, independence, random variables, probability distributions, expectations, moments, characteristic functions, inversion formulae, sums of independent random variables, the multivariate normal distributions, the central limit theorem, the weak and strong laws of large numbers, Monte Carlo applications. Prerequisite: 250. Elective Pass/Fail.

481-3 Elements of Stochastic Processes. An introduction, including normal, Poisson, and Markov processes. Prerequisite: 480. Elective Pass/Fail.

483-3 Introduction to Mathematical Statistics. A development of the elements of statistical theory. Probability axioms, probability distributions, moments and moment generating functions. Statistical inference, estimation, testing hypotheses. Not for graduate credit in mathematics. Prerequisite: 250. Elective Pass/Fail.

486-3 Design of Experiments. A mathematical model development of the statistical design and analysis of experiments with emphasis on practical applications. Includes completely randomized, randomized block, Latin square, split plot, incomplete block, and response surface designs, as well as factorial and fractional factorial experiments. Prerequisite: 483. Elective Pass/Fail.

487-3 Nonparametric Methods in Statistics. A discussion of confidence intervals and tests of hypotheses where no functional form is postulated for the population. Prerequisite: 483 or 480. Elective Pass/Fail.

488-3 Linear Statistical Models. An introduction to the general linear model in both the univariate and multivariate cases and its applications. Included is a basic discussion of linear models, estimable functions, estimation spaces, error spaces, and such applications as regression analysis, growth curve analysis, discriminant analysis and canonical analysis. Prerequisite: 221 and 483. Elective Pass/Fail.

495-1 to 6 Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chairman and instructor. Elective Pass/Fail.

501-3 Real Analysis.

505-3 Ordinary Differential Equations.

506-1 to 9 Advanced Topics in Ordinary Differential Equations.

507-3 Partial Differential Equations.

508-3 Integral Equations.

510-3 Mathematical Logic.

512-3 to 12 (3 per topic per semester) Topics in Mathematical Logic.

514-4 General Statistical Analysis.

515-4 Linear and Multivariate Statistical Methods.

520-3 Algebraic Structures.

522-3 to 9 per topic (3, 3, 3) Advanced Topics in Algebra.

525-3 Number Theory.

526-3 to 9 per topic (3, 3, 3) Advanced Topics in Number Theory.

528-3 Formal Languages and Automata.

529-3 Theory of Computability.

530-3 General Topology.

531-3 Algebraic Topology.

532-3 to 9 per topic (3, 3, 3) Advanced Topics in Topology.

536-3 Differential Geometry.

537-3 to 9 per topic (3, 3, 3) Advanced Topics in the Topology and Geometry of Manifolds.

550-1 to 6 per topic (1 to 3 per semester) Seminar.

551-3 Introduction to Functional Analysis.

552-3 to 9 per topic (3, 3, 3) Special Topics in Analysis.

553-3 to 9 (3, 3, 3) Special Topics in Functional Analysis.

555-3 Complex Variables.

560-3 Calculus of Variations.

572-3 to 9 per topic (3, 3, 3) Advanced Numerical Analysis.

580-3 Statistical Theory.

581-3 Probability.

582-3 to 6 per topic (3, 3) Advanced Topics in Probability and Statistics.

595-1 to 6 per topic Special Project.

599-1 to 6 Thesis.

600-1 to 30 Dissertation.

Media Technology (Library Assistant) (Program, Major, Courses)

Technicians trained in the library and audiovisual sciences find a multitude of opportunities in business, industry, and education.

This program is based on the intern concept so that the student can directly relate theory to job situations. Classroom and laboratory study cover three basic areas: media library technical preparation in technical processing,

cataloging of books and non-book material, basic reference tools, and book/periodical binding; media audiovisual technical preparation in basic graphics for projected and non-projected materials, technical photography, and equipment operation and maintenance; and general education to provide for individual growth and development.

Internship is directly related to a professional on-job work experience with emphasis placed on the student's interest in library or audiovisual experience. Throughout the program students are actively involved in professional workshops where they experience teaching others how to operate equipment or prepare teaching graphics materials.

The student should expect to spend approximately \$175.00 for supplies.

An advisory committee works closely with the faculty of the program. Current members are: John Bauernfeind, director, Herrin Media Center, Herrin; Joe Birk, regional director, Encyclopedia Britannica Educational Corp., Jackson, Missouri; Wiladene Brown, educational specialist, Office of the Superintendent of Public Instruction, Mt. Vernon; Jerry Hostetler, director of film library, Learning Resources Service, Southern Illinois University at Carbondale; Judith Ann Williford, director of undergraduate library, Morris Library, Southern Illinois University at Carbondale; and James A. Ubel, Shawnee Library System, Carterville.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Media Technology (Library Assistant)

GSD 101	3
Commercial Graphics 128	2
Electronic Data Processing 107	3
Secretarial and Office Specialties 101a	2.5
School of Technical Careers 102, 104, 153a,b	8
Media Technology 101, 103, 109, 203, 209-14, 213-9, 215, 217	49
<hr/>	
<i>Total</i>	67.5

Courses

101-6 Media Equipment. Each student will get experience in the operation, cleaning and basic maintenance of non-projection equipment (tape recorders, record players, etc.) and projection equipment (16mm film projectors, opaque and overhead projectors, etc.) used in media centers. Mastery of terminology, equipment set-up, and operation is combined with first echelon maintenance of the equipment. Lecture two hours. Laboratory six hours.

103-4 Media Libraries. The student will be introduced to various types of libraries and the basic functions of each. In using the library's facilities for the preparation of special reports, the student will study current trends in libraries and the opportunities for the para-professional. While developing library skills, the student will consult the basic reference tools and other resources used in elementary, secondary, university and special media centers. Lecture two hours. Laboratory four hours.

109-4 Cataloging Media Materials. The student will perform the tasks of classification, cataloging and preparation of print materials (books, pamphlets, etc.) and non-print materials (films, filmstrips, records, etc.) for circulation based on present-day practice with the interpretation of the Anglo-American Cataloging Rules. The student will prepare, type and file catalog cards for each unit. Lecture two hours. Laboratory four hours.

203-6 Production of Media Graphic Materials. Students will develop the graphic skills essential to the production of nonprojected materials as graphs, charts, posters, and visual displays. Projected graphic production will include overhead transparencies, opaque materials, and slides. Students will be required to master the skills required to

do mechanical lettering, fundamental graphic design, and the production of clean graphic work. Lecture two hours. Laboratory six hours.

209-4 to 14 Media Intern. Supervised training and work experience in an approved media resources center, library, or audiovisual center. Weekly reports and a term report are required. Periodic discussions are led by the coordinator and attended by other interning students. Training includes work commensurate with skills acquired in formal courses and wider experiences obtained from association with professional media/library/audiovisual staff. Lecture one hour. Laboratory 20 hours.

213-2 to 9 Technical Photography. Students will receive extensive darkroom work and technical graphic assignments essential to the support of a professional media center. Various still cameras, lighting set-ups, photo-chemistry, slide production and duplication, black and white and color printing will be used to produce professional graphic displays. Maximum lecture three hours. Maximum laboratory ten hours.

215-3 Multi-Media Techniques. A study of the technical aspects in the use and operation of multi-media equipment. The students will use various techniques in preparing filmstrips, slide-tape presentations, and video-tape presentations. Mastery of the equipment set-up and operation is combined with the various individual and group presentations. Lecture two hours. Laboratory two hours.

217-3 Media Services and Seminar. Seminar students do research of literature that relates to the state of the art of media technology. Field trips and guest lecturers provide important data on the merging role of printed and non-printed materials as utilized in media centers. Students will complete a personal placement resume and prepare a professional portfolio. Lecture three hours.

313-3 Photography and Television for Law Enforcement. Students will master basic camera techniques and darkroom procedures essential to the use of photography as a tool to record and recall evidence. Television instruction will enable students to use portable systems as a surveillance and recording instrument. Students are required to prepare a professional portfolio of photographic techniques used in class.

Medical Education Preparation (Courses)

Courses

400-2 to 12 (2 per semester) Medprep Seminar. Seminar on social, professional, and scientific issues of interest to students planning a career in medicine. Required of Medprep participants. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students.

401-1 to 3 (1, 1, 1) Medprep Basic Tutorial. Focus on reading and learning skills, testmanship, verbal communication, general mathematics, English, and other skills critical for academic success in preprofessional and professional training. Required of all students for one semester upon starting program. Not for graduate credit. Prerequisite: restricted to Medprep students.

402-1 to 6 (1, 1, 1, 1, 1, 1) Medprep Special Problems. Seminars, workshops, lectures, and field experiences related to preparing the student for medical school and careers in medicine. Sections: (a) MCAT Preparation; (b) Journal Club; (c) Clinical Experience; (d) Independent Research; (e) Independent Readings; (f) Other. Required of Medprep participants. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students.

403-1 to 12 (1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2) Medprep Biology Tutorial. Depending on individual need content will be remedial, supplementary to concurrent biological science courses, or additional permitting acceleration. Sections will be (a) Genetics; (b) Anatomy, (c) Physiology, (d) Embryology, (e) Microbiology, (f) Zoology, (g) Special. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students or consent of instructor.

404-1 to 12 (1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2) Medprep Chemistry Tutorial. Depending on individual need content will be remedial, supplementary to concurrent preprofessional chemistry courses (Chemistry 222a,b; 344 and 346; and 450) or additional permitting acceleration. Sections will be (a,b) Inorganic; (c,d) Organic; (e) Biochemistry; (f) Other. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students.

405-1 to 4 (1 to 2, 1 to 2) Medprep Physics Tutorial. Depending on individual need content will be remedial, supplementary to concurrent preprofessional physics courses or

additional permitting acceleration. Sections will correspond to two semester physics sequence. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students.

Microbiology (Department, Major, Courses)

Microbiology deals with the study of microorganisms, examining various forms, their classification, growth, reproduction, heredity, biochemistry, ecology, and their relationship to other living organisms including Man. The following program of study prepares one for laboratory or teaching positions after the bachelor's degree or for graduate study leading to advanced degrees. Students who anticipate the pursuit of higher degrees in microbiology are strongly urged to continue their study of chemistry through physical chemistry, which is an entrance requirement to graduate study in microbiology at many institutions.

Opportunities for specialized training in diagnostic bacteriology, virology, immunology, genetics, biochemistry, and industrial processes are available.

Bachelor of Arts Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	5
English Composition	(3)
Speech	(2)
Writing Course	(2)
Mathematics 110a,b or 111	(4) + 1
Foreign Languages	(4) + 4
 <i>Requirements for Major in Microbiology</i>	65-69
Microbiology 301, 302	7
Microbiology electives: senior level work consisting of 16-20 lecture credits and a minimum of 9 laboratory credits	25-29
Two from: Biology 305, 306, 307, 308, 309	6 ²
Chemistry 222a,b, 344, 345, 346, 347	19 ²
Physics 203a,b and 253a,b	8 ²
 <i>Electives</i>	1-5
 <i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

²These courses will meet the biological and physical science requirements for the College of Science and may be substituted for a maximum of 12 hours in General Studies.

Courses

301-4 Principles of Microbiology. Morphology, structure, metabolism, population dynamics, and heredity of the microbial agents with emphasis on pure culture methods of study of bacteria, viruses, and related organisms. Three hours lecture, three hours laboratory. Fall and Spring. Prerequisite: one year of college chemistry and GSA 115, or equivalent.

302-3 General Microbiology. Methods of differentiation and classification of bac-

teria; their biochemical activities; genetics and biological and physiological interrelationships. Two hours lecture and three hours laboratory. Prerequisite: 301.

403-2 Medical Bacteriology Lecture. A survey of the mechanisms of infection, epidemiology, and immunity and the specific application of these principles to the symptomatology, diagnosis, treatment, and control of the more common bacterial infections of man. Two hours lecture. Fall semester. Prerequisite: 302.

404-2 Medical Bacteriology Laboratory. Procedures for the collection and handling of medical specimens for microbial examination and for cultivation and identification of the pathogenic organisms by their morphological, biochemical, and serological characteristics and the fundamental role of the bacteriologist in the diagnosis of infectious diseases. Four hours laboratory. Fall semester. Prerequisite: 403 or concurrent enrollment.

421-3 Foods and Industrial Microbiology Lecture. The relationships of microorganisms to the preparation and preservation of foods; their application to the industrial production of beverages, foods, antibiotics, and other commercial products. Consideration of sanitation, pollution, and recycling of waste products into useful materials. Pure food and drug regulations. Three hours lecture. Prerequisite: 301.

422-2 Foods and Industrial Microbiology Laboratory. Methods for preparation, preservation, sanitary inspection, and analyses of foods and industrial products. Four hours laboratory. Prerequisite: 421 or concurrent enrollment.

425-4 (2, 2) Biochemistry and Physiology of Microorganisms Lecture. Chemical composition, cellular structure, and metabolism of microorganisms. Prerequisite: organic chemistry.

426-4 (2, 2) Biochemistry and Physiology of Microorganisms Laboratory. Prerequisite: 425a,b or concurrent enrollment.

441-3 Virology Lecture. General properties; classification and multiplication of bacterial and animal viruses; lysogeny; immunological and serological reactions; relation of viruses to cancer; consideration of selected viral diseases of animals. Prerequisite: 302.

442-2 Virology Laboratory. Tissue culture methods, multiplication and assay of animal and bacterial viruses, purification, electron microscopy, interference, immunity. Five hours laboratory. Prerequisite: 441 or concurrent enrollment.

451-3 Immunology Lecture. Natural and acquired immunity. Antigens, antibodies, and antigen-antibody reactions in vitro and in vivo. Three hours lecture. Prerequisite: 302.

452-2 Immunology Laboratory. Natural defense mechanism and immune response, preparation of antigens and antibodies, serological reactions, conjugated antibodies, electrophoresis, immunological reactions in vivo. Five hours laboratory. Prerequisite: 451 or concurrent enrollment.

460-3 Genetics of Bacteria and Viruses Lecture. Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Three hours lecture. Prerequisite: 302.

461-3 Genetics of Bacteria and Viruses Laboratory. Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Six hours laboratory. Prerequisite: 460 or concurrent enrollment.

462-2 Fungal Genetics Lecture. Mendelian and molecular genetics of molds and yeasts. Mutant induction, sexual crosses, tetrad analysis, linkage, and mapping. Two hours lecture. Prerequisite: Biology 305.

463-2 Fungal Genetics Laboratory. Four hours laboratory. Prerequisite: 462 or concurrent enrollment, and consent of instructor.

490-1 to 3 Undergraduate Research Participation. Investigation of a problem either individually or as part of a research group under the direction of a member of the faculty. Prerequisite: 3.0 grade point average in microbiology and consent of instructor.

500-1 Seminar.

502-3 Evolution of Genetic Thought.

504-3 Methods of Microbiological Research.

505-1 Special Topics in Microbiology.

511-1 to 7 Research.

528-1 to 3 Readings in Microbiology.

540-3 Advanced Virology.

541-3 Advanced Virology Laboratory.

542-3 Molecular Virology.

543-3 Molecular Virology Laboratory.

562-2 Molecular Genetics.

599-1 to 3 Thesis.

600-1 to 12 Dissertation.

Molecular Science (Major [Doctoral only], Courses)

Courses

- 592-1 Colloquy in Molecular Science.
- 597-2 to 30 Selected Topics in Molecular Science.
- 598-2 to 16 Special Projects in Molecular Science.
- 600-1 to 36 (1 to 16 per semester) Dissertation.

Mortuary Science and Funeral Service (Program, Major, Courses)

This program is the only mortuary science program offered in a public university in Illinois. The program was developed in response to a request from the Illinois Funeral Directors Association. The Association's members recognized the need for a school of higher education to educate funeral service practitioners. The program is fully accredited by the American Board of Funeral Service Education and the Illinois Department of Registration and Education.

This program also is designed to accommodate students transferring from community colleges at the end of the first year. Enrollment of beginning students is limited by size of faculty and physical facilities.

The program requires two academic years of study and one summer of internship in a funeral home for completion. In addition to technical courses which prepare the student for the profession, the student will take a number of courses which will lead to an understanding of the psychological, sociological, and theological implications of death.

Faculty members are licensed funeral directors and embalmers with experience in the profession. Professional courses are offered in the program's own preparation room-laboratory. Graduates of the program will have satisfied requirements for the trainee license and will be eligible to write the State and/or National Board examinations and to begin serving their traineeship. Career opportunities are excellent and to date, all graduates who desired placement have been employed.

Persons active in the profession serve on the program's advisory committee. Current members are: Joseph McCracken, McCracken Funeral Home, Pana; Hugh Kenny, Chicago Funeral Directors Services Association; Donald Yurs, Yurs Funeral Home, St. Charles; James Couch, Couch Funeral Home, Chicago; William Froelich, Jr., Froelich Memorial Home, Gridley; Daniel A. Justen, Peter M. Justen and Son Funeral Home, McHenry; Joseph W. Schilling, Schilling Funeral Home, Mattoon; William Huffman, Huffman Funeral Home, Carbondale; Charles Rankin, Rankin Funeral Home, Salem; James R. Wilson, Wilson Funeral Home, Marion; and Robert W. Ninker, executive secretary, Illinois Funeral Directors Association, Springfield.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Mortuary Science and Funeral Service

GSA 115 or Zoology 118	3
GSB 202	3
GSD 101, 153	5

Secretarial and Office Specialties 105a, 203a	6
School of Technical Careers 101 or 102 or 153a, 115a,b	7
Mortuary Science 101, 102, 108, 225a,b, 230, 250a,b, 255, 256, 257, 375a,b	49
Elective (in Health Education)	2
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Total	75

Courses

101-3 Orientation to Funeral Service. The student will trace the history of funeral service from ancient times through modern practices with emphasis on the development of funeral practices in the United States. The student studies the customs of various cultures throughout the world including customs in the United States. He will demonstrate a knowledge of funeral service organizations and will discuss topical areas of current discussion. Lecture three hours.

102-4.5 Restorative Art. The student will study the anatomical structure of the cranial and facial areas of the human skull. He will describe the facial proportions and markings. The student studies the methods and techniques used to restore facial features that might have been destroyed by traumatic and pathological conditions. He will demonstrate a knowledge of color and cosmetology theory. Laboratory assignments will include modeling, applying cosmetics, making hair restorations and casting facial features. Lecture three hours. Laboratory three hours.

108-3 Funeral Service Psychology. Designed to acquaint the student with an overview of psychology in funeral service as applied to death, grief, and mourning. The student will examine interpersonal and public relations as they affect the funeral service practitioner in his relationship with the public he serves. Lecture three hours.

225-9 (4.5, 4.5) Embalming Theory and Practice. (a) The student will be introduced to techniques of embalming through a study of the body, sanitation, embalming agents, instruments, and methods of embalming. The student studies the theory, practices, and techniques of sanitation; and restoration and preservation of deceased human remains. His laboratory experience will consist of embalming deceased remains and of other related activities. Lecture three hours. Laboratory three hours. (b) The student will study the anatomy of the circulatory system, the autopsied case, the cavity embalming, the contents of the thoracic and abdominal cavities, and the treatment of "special cases" that might be encountered in the embalming process. His laboratory experience is a continuation of 225a. Lecture three hours. Laboratory three hours. Must be taken in a,b sequence.

230-4 Mortuary Anatomy. The student will study the structure and function of the human body as a whole including: general organization, structural organization, tissues, skeletal system, nervous system, circulatory system, physiology of circulation, glands, respiratory system, digestive system, genito-urinary system, integument, and special senses. Lecture four hours.

250-6 (3, 3) Mortuary Management. (a) The student will examine the problems involved in the practice of funeral management. Included are the funeral director's responsibilities from the first call until the completion of the last service rendered the family, funeral home operation and records, ethics and professional regulations. Lecture three hours. (b) The student will trace the laws and regulations that govern the practice of funeral service. He will study the Illinois License Law, Vital Statistics Act, transportation rules, and Social Security regulations. The funeral directors' responsibilities and relationships to local boards of health and the State Department of Public Health are emphasized. Lecture three hours.

255-2 Embalming Chemistry. The student will study the chemistry of the body, sanitation, toxicology, chemical change in deceased human remains, disinfection, and embalming fluids. Laboratory experiments will complement lecture material. Lecture three hours. Laboratory two hours. Eight weeks. Prerequisite: introductory chemistry course.

256-4.5 Introductory Microbiology. The student will survey microbiology: morphology, structure, physiology, populations of microbial organisms, microbial destruction, immunology, and pathogenic agents. Lecture three hours. Laboratory three hours.

257-3 Pathology. The student will be introduced to the study of the cause, course, and effects of diseases upon the human body. He will study ways in which tissue changes affect the embalming process. Lecture three hours. Prerequisite: 230 or equivalent.

375-10 (5, 5) Funeral Service Internship. (a) The student will spend one summer in a university approved funeral home learning in actual practice situations: functional organization, procedures, and policies of the establishment. He will perform duties and

services as assigned by preceptor and coordinator to include surveillance of and participation in the execution of total services rendered to a family. **(b)** He will be given an opportunity to learn embalming techniques by active participation in the preparation room. Service reports and assignments are required to be completed by the student. Prerequisite: all other requirements of the Mortuary Science curriculum must be met. Must take a and b concurrently.

380-2 Funeral Service Seminar. Formal discussions are held to evaluate the experience and progress of the participants in the internship program. Preparations are made for the board examinations. Prerequisite: concurrent enrollment in 375. Mandatory Pass/Fail.

Music (School, Major, Courses)

The requirements for entrance and for graduation as set forth in this bulletin are in accordance with the published regulations of the National Association of Schools of Music, of which this school of music is a member.

Students who wish to major in music are assumed to have acquired extensive experience in performing with school groups and/or as a soloist, basic music reading ability, and a strong sensitivity to music and a desire to communicate it to others. Those without such a background will have to complete additional preparation, which may extend the time to graduation beyond four academic years. Music credits earned at other accredited institutions will apply toward requirements, but the transferring student remains subject to evaluation by the appropriate music faculty for proper placement in the music curriculum.

All students in the Bachelor of Music degree program must maintain satisfactory membership in one of the following ensembles: Music 011, 013, 014, 017, 020, 021, or 022 every term in residence. All junior and senior students with a major or minor in music must maintain satisfactory membership every session in one of the above ensembles, or in one of the following: Music 341, 346, or 414. Students are exempt from this requirement during the session of student teaching. Students also may elect additional large or small ensembles, not to exceed three in any one session.

Each student with a major or minor in music must designate a principal applied field and complete the credits specified within the selected specialization. Changes in the principal applied field are permissible so long as the student accumulates the required credit total and meets the required level of proficiency.

Credits in one's principal applied field are based on private lessons with a member of the faculty, weekly participation in Studio Hour (Mondays, at 10:00 a.m.), and recorded attendance each semester at seven campus recitals or concerts, approved for the purpose by the School of Music faculty, in which the student is not a participant. Students who fail to fulfill either the Studio Hour or attendance at campus recitals or concerts requirement will receive a grade of Incomplete, which can be removed only by making up the deficiency during the ensuing semester.

A student who wishes to attempt the performance specialization in applied music must have prior approval of the appropriate faculty jury, and thereafter enrolls for and receives two lessons per week for 4 credits per semester.

A student may elect private instruction in a second field or fields, but this is for one credit per semester since the studio hour and recital attendance requirements pertain only to the principal applied field.

Students not majoring or minoring in music may elect private applied music instruction if they can exhibit sufficient ability, they are participating simul-

taneously in one of the University performing groups, and faculty loads will allow. Registration is at one credit per semester, with no studio hour or recital attendance requirement. Those wishing such instruction should arrange for an interview and audition with the appropriate instructor.

Students specializing in music education should apply for admission to the Teacher Education Program as soon as they have accumulated 30 semester hours of credit. After being admitted, they must complete a series of specific requirements in order to qualify for student teaching and for the Illinois teaching certificate. Additional information is given under Education, Professional Education Experiences, and Secondary Education in this chapter.

Financial Information

Special grants and awards are available to students enrolled in the School of Music who are qualified and in need of financial assistance. Opportunities for employment in the student work program are excellent. In addition, there are scholarships (tuition awards) and loan programs available through the Office of Student Work and Financial Assistance.

Beyond the general university tuition and fees, there are no additional charges for music lessons or use of practice rooms, nor for rental of instruments used in classes or performing groups; however, the student is responsible for purchase of his own textbooks, solo literature, and incidental supplies for music lessons and classes. Such costs normally range from \$20.00 to \$50.00 per semester.

Bachelor of Music Degree, College of Communications and Fine Arts

<i>General Studies Requirements</i>	45
Including GSA 361 and Music 102 and 105a as GSC substitutes	
<i>Requirements for Major in Music</i>	75
Theory: Music 104a,b; 105a,b; 204; 205;	
207; 321; 322	(3) ¹ + 16
History-Literature: Music 102; 357a,b	(2) ¹ + 6
Major performing ensembles (8 semesters)	8 ²
Partial Recital: Music 398	1
Beginning Piano: Music 030 (or waiver	
by examination)	4 ³
Specialization (see below)	40
<i>Total</i>	120

MUSIC MAJOR—PERFORMANCE SPECIALIZATION, INSTRUMENTAL (STANDARD ORCHESTRAL AND BAND INSTRUMENTS, AND GUITAR)

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 407, 421, 461, or any of 470 series	6
Approved music electives	4
	40

MUSIC MAJOR—PERFORMANCE SPECIALIZATION, KEYBOARD (PIANO, ORGAN, AND HARPSICHORD)

Music 030 not required ³	
Music 140-440, principal field, 8 semesters	28

Music 498	2
Music 461a	2
Music 407, 421, or any of 470 series	4
Music 341	2
Approved music electives	6
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	44

MUSIC MAJOR—PERFORMANCE SPECIALIZATION, VOICE

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 407, 421, 461, or any of 470 series	4
Approved foreign language, 2 semesters	(4) ¹ + 4
Music 363	2
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	40

MUSIC MAJOR—MUSIC HISTORY-LITERATURE SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Music 407, 421	4
Music 472, 473, 474, or 499	2
Music 475, 476, or 477	6
Approved foreign language, 3 semesters	(4) ¹ + 8
Approved electives (suggest Music 410, 414, 482, and/or fourth semester of foreign language)	8
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	40

MUSIC MAJOR—MUSIC THEORY-COMPOSITION SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Music 407, 421	4
Music 280, 380	8
Music 480, 481, or 499	4
Music 470 series	5
Approved music electives, 300 level or above	7
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	40

MUSIC MAJOR—MUSIC EDUCATION SPECIALIZATION⁴

<i>General Studies Requirements</i>	45
Including GSA 361; GSB 202, GSB 212 or 300, and Music 102 and 105a as GSC substitutes	
<i>Requirements for Major in Music</i>	57
Theory: Music 104a,b; 105a,b; 204, 205; 207; 321; 322	(3) ¹ + 16
History-Literature: Music 102, 357a,b	(2) ¹ + 6
Major performing ensembles, 7 semesters ²	7
Music 140-340, principal field, 6 semesters	12
Music 398	1
Music 031 (or waiver by examination)	1
Music 304	2
Music education specialization	12

Music 030 ³	2
Music 032, 033, 034, 035	4
Music 305, 318, 324	6
Or	
Music 030	4
Music 317, 325	4
Music 306 or 032-036 series	2
Music 363	2

Professional Education Requirements	24
See Teacher Education Program, page 68.	
Total	126

Bachelor of Arts Degree, College of Liberal Arts

This program provides a strong cultural background in music, as well as the necessary basis for various part-time and musically related careers. Additional study is ordinarily necessary to qualify for regular full-time music positions.

Required courses are Music 102, 104a,b, 105a,b, 204, 205, 207, 357a,b; four semesters of 140 and 240, eight hours; performing ensembles, four semesters, four hours; and music electives, six hours, for a total of 40 hours. Students must comply with the studio hour and recital attendance requirements listed under general requirements in music. GSC foreign language does not satisfy the GSC requirements in the College of Liberal Arts.

Minor

The minor in music includes Music 102, 030a,b, 104a,b, 105a,b, 357a,b; two semesters of performing ensembles, two hours; and two semesters of 040 or 140, four hours for a total of 24 credits. Students must comply with the studio hour and recital requirements listed above.

¹GSC substitutions.

²Exception for performing ensembles in music education specialization.

³Exceptions for Music 030 (and consequent credit hour adjustment) in keyboard performance and instrumental music education specializations.

⁴These programs meet the requirements for the Illinois Special Teaching Certificate in music.

Courses

- 011-1 to 8 (1 or 2, 1 or 2, 1 or 2, 1 or 2) Marching Salukis.** Fall semester only. Open to all students with experience in bands. Performs at all home football games, and one or two away. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.
- 012-1 to 4 (1, 1, 1, 1) Laboratory Band.** Spring semester only. Open to all students with experience in bands. Opportunity to extend experience on one's secondary instrument, if desired. Performs at all home basketball games and functions as laboratory group for conducting students.
- 013-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Symphonic Band.** Open to all students with experience in bands. Performs standard band literature. Two or three concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.
- 014-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Concert Wind Ensemble.** A select group which performs advanced contemporary literature. Three concerts and tour per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.
- 015-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Jazz Ensemble.** For students experienced with popular literature. Concerts and tours when feasible. Prerequisite: audition prior to first registration.
- 016-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Brass and Percussion Ensemble.** A select group,

performing literature scored for this instrumentation. Two or three concerts per year and tour as feasible. Prerequisite: audition prior to first registration.

017-1 to 12 (1 per semester) Symphony. Open to all experienced string, woodwind, brass, and percussion players. Plays standard and advanced orchestral literature, performs three or four concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.

018-1 to 4 (1, 1, 1, 1) String Orchestra. Fall semester only. Open to all string players concurrently enrolled in Symphony. Rehearses symphony parts and string orchestra literature.

019-1 to 4 (1, 1, 1, 1) Laboratory Orchestra. Spring semester only. Open to all experienced string, woodwind, brass, and percussion players with consent of instructor. Performs opera and orchestral-choral works.

020-1 to 12 (1 per semester) University Chorus. Open to all students who desire to sing. Study and performance of major choral-orchestral literature. Two concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. No audition required.

021-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) S.I.U. Chorale. Open to all experienced singers. Emphasis on advanced contemporary literature. Three or four concerts per year and tours as feasible. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.

022-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) University Choir. A select group which performs advanced choral literature of all eras. Three or four concerts per year and tours as feasible. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration, and each succeeding fall.

023-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Southern Singers. Open to all experienced singers. Emphasis on light, popular literature. Two or three appearances per year.

024-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Male Glee Club. Open to all male students who desire to sing. Serious and lighter glee club material. Frequent appearances on and off campus.

025-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Women's Choral Ensemble. Open to all women who desire to sing. Two or three appearances per year.

030-4 (1, 1, 1, 1) Piano Class. (a) Level 1, (b) Level 2, (c) Level 3, (d) Level 4. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Prerequisite: major or minor in music, elementary education, early childhood education, or consent of instructor.

031-2 (1, 1) Voice Class. (a) Level 1, (b) Level 2. Designed to develop functional command of basic vocal skills needed in teaching music. Prerequisite: consent of instructor.

032-3 (1, 1, 1) String Techniques Class. (a) Upper Strings; (b) Lower Strings; (c) Mixed Strings. Designed to develop essential techniques and principles which can be used in teaching young string pupils. Students begin with one instrument and shift to another at mid term. Take a, b, or c in any order. Prerequisite: music major or minor.

033-3 (1, 1, 1) Woodwind Techniques Class. (a) Flute and Single Reeds; (b) Double Reeds, (c) Mixed Woodwinds. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students begin on one instrument and shift to another at mid term. Take a, b, or c in any order. Prerequisite: music major or minor.

034-3 (1, 1, 1) Brass Techniques Class. (a) Upper Brass; (b) Lower Brass; (c) Mixed Brass. Designed to develop essential techniques and principles which can be employed in teaching young brass pupils. Students begin with one instrument and shift to another at midterm. Take a, b, or c in any order. Prerequisite: music major or minor.

035-1 Percussion Techniques Class. Designed to develop basic techniques and principles which can be employed in teaching young percussion pupils. Prerequisite: music major or minor.

036-2 (1, 1) Guitar Class. (a) Level 1, (b) Level 2. Designed to develop basic techniques and principles which can be employed in teaching music. Prerequisite: major or minor in music, elementary education, or early childhood education, or consent of instructor.

040, 140, 240, 340, 440, 540-1, 2, or 4 Applied Music. Offered at six levels in the areas listed below. May be repeated for credit as long as passing grade is maintained. Student must be concurrently enrolled in one of the performing groups. Prerequisite for 040: satisfactory completion of beginning class instruction offered in that area, or the equivalent. Prerequisite for 140: three or more years of prior study or performing experience, or two semesters of C or better at 040 level. Prerequisite for 240, 340, 440, 540: two semesters of C or better at previous level, or consent of applied jury. Music

majors and minors enroll for two credits on their principal instrument, taking one half-hour private lesson and studio class, Mondays at 10:00. Those with prior approval by their applied jury for the specialization in performance enroll for four credits, taking two half-hour private lessons and the studio class each week. Non-music majors or minors, and those music majors taking a second instrument, enroll for one credit, taking one private or class lesson per week. Six hours of individual practice per week required for each lesson. For shorter sessions, credit is reduced or lesson time is increased proportionately.

- a. Flute
- b. Oboe
- c. Clarinet
- d. Bassoon
- e. Saxophone
- f. Horn
- g. Trumpet
- h. Trombone
- i. Baritone
- j. Tuba
- k. Percussion

- l. Violin
- m. Viola
- n. Cello
- o. String Bass
- p. Voice
- q. Piano
- r. Organ
- s. Harpsichord
- t. Guitar
- u. Recorder

101-2 Music Fundamentals. Rudiments of music for those with little or no musical background. One lecture and one piano laboratory session per week. Provides preparation for 300, 301, 302, and 303.

102-2 Survey of Music Literature. Characteristic forms and styles. Analysis and listening. Examples from the leading composers of each era. Prerequisite: music major or minor.

104-2 (1, 1) Aural Skills. A laboratory course designed to complement 105a and b. Practice in recognition and singing of basic pitch and rhythm materials, and their realization in standard musical notation. For those planning a major or minor in music. Take a and b in sequence or, with prior consent of instructor, concurrently.

105-6 (3, 3) Basic Harmony. Study of traditional diatonic tonal materials and standard notational practice. Includes keyboard skills. For those with performing experience and planning a major or minor in music. Take a and b in sequence. Prerequisite: concurrent registration in 104 and 030, or equivalent aural and keyboard skill.

107-1 Applied Harmony for Fretted Instruments. Application of basic harmonic functions to the fretted instruments including guitar. Prerequisite: concurrent enrollment in guitar (140-540t) or consent of instructor.

140-1, 2, or 4 Applied Music. (See 040.)

204-1 Advanced Aural Skills. Continuation of 104. Designed to complement 205. Prerequisite: 104b.

205-3 Advanced Harmony. Study of chromatic tonal materials, including keyboard skills. Prerequisite: 104b and 105b, and concurrent registration in 204.

207-2 Contrapuntal Techniques. Basic contrapuntal principles and skills, especially as applied to 18th and 19th century styles. Extensive writing practice, and analysis of stylistic models. Introduction to major contrapuntal forms. Prerequisite: 205 and 204, or take 204 concurrently.

240-1, 2, or 4 Applied Music. (See 040.)

280-2 to 4 (2, 2) Beginning Composition. Application of contemporary compositional techniques. Prerequisite: 105b or consent of instructor.

300-2 Teaching Music in the Primary Grades. For non-music majors only, who may be expected to teach music in grades K-3. Methods and materials for instruction. Prerequisite: 101 or equivalent.

301-2 Teaching Music in the Intermediate Grades. For non-music majors only, who may be expected to teach music in grades 4-6. Methods and materials for instruction. Prerequisite: 101 or equivalent.

302-2 Music in Special Education. For non-music majors only, with an interest in pursuing a career in special education. Prerequisite: 101 or equivalent.

303-2 Music for Pre-Schoolers. Methods and materials for teaching music to pre-school youngsters. Recommended for majors in child and family and early childhood education.

304-2 The General Music Program. A survey of problems and methods in teaching music in the schools, with scheduled observations of school music programs in operation. Special attention to the teaching of comprehensive musicianship through the general music program in the junior high school. Prerequisite: admission to teacher education program.

305-2 Instrumental Music in the Schools. Administration of the school instrumental music program. Emphasis upon teaching instruments and the management and instruction of instrumental organizations. Prerequisite: 304.

- 306-2 Music Specialist in the Elementary Schools.** Principles and methods employed in supervising and teaching the elementary school music program. Designed for music majors and minors. Prerequisite: 304.
- 317-3 Choral Conducting and Methods.** Score reading, baton techniques, and rehearsal techniques, organization and management problems of school choral groups. Prerequisite: music major or minor and junior standing.
- 318-3 Instrumental Conducting.** Score reading, baton techniques, and rehearsal management. Supervised application in ensemble. Prerequisite: music major or minor and junior standing.
- 321-2 Form and Analysis.** Comprehensive study of harmonic and formal structures and typical stylistic traits of 18th and 19th century music. Prerequisite: 204 and 207.
- 322-3 Principles of 20th Century Music.** Comprehensive study of harmonic techniques and other stylistic traits of major 20th century idioms. Prerequisite: 321.
- 324-1 Instrumental Arranging.** Practice in scoring of transcriptions, arrangements, and original compositions for standard instrumental groups. Prerequisite: 205.
- 325-1 Choral Arranging.** Practice in scoring arrangements and/or original compositions for choral groups. Prerequisite: 205.
- 331-1 Jazz Improvisation.** Ear training, phrasing in extemporaneous playing, use of chord symbols and chord progressions, special effects peculiar to jazz playing and styles of playing. Prerequisite: 205.
- 340-1, 2, or 4 Applied Music.** (See 040.)
- 341-1 to 4 (1, 1, 1, 1) Accompanying Laboratory.** Experience, under supervision, in accompanying soloists and groups. Counts as a "major ensemble" for juniors and seniors.
- 346-1 to 12 Opera Workshop.** Open to all experienced singers and stage technicians. Performs one major work and two or more excerpt programs per year. Normal registration is for two credits; four credits with permission for those with major roles; eight credits for full-time summer workshop. Counts as a "major ensemble" for juniors and seniors.
- 347-1 to 12 Music Theater Workshop.** For experienced singers, actors, dancers, and instrumentalists. Normally offered during summer as a full-time course, for eight credits, or one credit per show for the orchestral players. Three or four musicals are rehearsed and presented. Prerequisite: audition.
- 357-6 (3, 3) Music History.** Study of musical examples and techniques evolving from the ancient period to the present. May take a or b in either order. Prerequisite: 102 and junior standing.
- 363-2 (1, 1) Pronunciation and Diction for Singers.** (a) English and French, (b) German and Italian. Establishment of proper pronunciation as applied to vocal literature. Prerequisite: one or more semesters of private or class voice instruction. Elective Pass/Fail.
- 365-1 to 48 Chamber Music.** Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible.
- a. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Vocal.**
 - b. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-String.**
 - c. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Woodwind.**
 - d. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Brass.**
 - e. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Percussion.**
 - f. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Keyboards.**
- 370-2 American Folk Music.** American folk music from its foreign heritage to its current manifestations.
- 372-3 The Music of Black Americans.** (Same as Black American Studies 362.) The study of the music created and produced by black people in the United States. Content ranges from work songs and spirituals through contemporary classical music. Although jazz is not ignored, primary focus is on other styles and genres. Some emphasis upon the environmental forces which shaped the music. Historically oriented.
- 380-2 to 4 (2, 2) Intermediate Composition.** Continuation of 280. Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. Prerequisite: 280-4.
- 398-1 to 2 (1, 1) Partial Recital.** Preparation and presentation of a partial recital in any applied field. Prerequisite: prior or concurrent registration in 340 and approval of applied jury.
- 399-5 (1, 1, 1, 1, 1) Graduate Preparatory Seminar.** (a) Music analysis, (b) Aural techniques, (c) Pre-Baroque, (d) Baroque and Classical, (e) Romantic and Modern. Designed to supply understanding and skills where deficiencies have been shown by the graduate proficiency examinations in music. Part or all may be taken in any sequence. Prerequisite: prior assignment by graduate committee in music.

400-1 to 2 (1, 1) Performance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Prerequisite: completion of 340 level or the equivalent in some field of applied music.

407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: 207.

410-6 (3, 3) Ethnomusicology. (Same as Anthropology 410h,i.) (h) Oceania, Asia, and Africa, (i) Middle East, Europe, and the New World.

414-1 to 8 (1 to 2 per semester) Collegium Musicum. For experienced singers and instrumentalists. Emphasis upon practical study of historical music literature of the Medieval, Renaissance, and Baroque eras. Counts as a "major ensemble" for juniors and seniors.

420-1 to 2 (1, 1) Instrument Repair. A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments.

421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: 321.

430-1 Jazz Arranging. Methods of scoring for popular groups. Practice in scoring arrangements and/or original compositions for jazz ensembles. Prerequisite: 324 or prior consent of instructor.

440-1, 2, or 4 Applied Music. (See Music 040.)

447-4 (2, 2) Electronic Music. (a) Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. (b) Emphasis upon creative projects, more sophisticated sound experimentation, and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 280 or GSA 361 or consent of instructor.

453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. Designed for experienced teachers and advanced students.

456-4 (2, 2) Music for Exceptional Children. (Same as Special Education 456.) (a) Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: 302 or prior consent of instructor.

460-4 (2, 2) Music Aesthetics and Appreciation. (a) Nature and significance of music in the life of Man. Critical theory in the writings of philosophers of music and art from Plato through Dewey and Cage. (b) Principles and methods for teaching music appreciation in secondary schools and colleges; theories upon which various methods and principles are based.

461-4 (2, 2) Applied Music Pedagogy. (a) Beginning. (b) Advanced. Specialized problems and techniques employed in studio teaching of any particular field of musical performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups. Take in a,b sequence.

468-2 to 4 (2, 2) Music Productions. Practicum in the techniques for staging operas and musicals.

472-2 Chamber Music Literature. A study of literature for the principal types of chamber music groups.

473-2 Piano Literature. A study of piano literature from its beginning to the present, including an introductory study of early harpsichord music.

474-2 Organ Literature. A survey of music for the organ in relation to the history of the instrument, from the Middle Ages to the present.

475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: 357-6 and, if graduate music major, completion of graduate examination in music history or deficiency requirements. For non-music majors: prior consent of instructor.

476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber

music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: 357-6 and, if a graduate music major, completion of graduate proficiency examination in music history or deficiency requirements. For non-music majors: prior consent of instructor.

477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: 357-6 and, if a graduate music major, completion of graduate proficiency examination in music history or deficiency requirements. For non-music majors: prior consent of instructor.

480-2 to 4 (2, 2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: 380-4.

481-1 to 4 Readings in Music Theory. Assigned readings and reporting of materials pertaining to a particular phase of music theory in historical perspective. Approximately three hour's preparation per week per credit (adjusted for shorter sessions). Prerequisite: 321 and 322 or prior consent of instructor.

482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: 357a and b, or prior consent of instructor.

483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions.)

498-2 to 4 (2, 2) Recital. Preparation and presentation of a full solo recital in any applied field. Prerequisite: prior or concurrent registration in 440 and approval of applied jury.

499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Prerequisite: prior consent of selected instructor.

501-2 Music Bibliography.

502-4 (2, 2) Analytic Techniques.

503-2 Evaluation in Music Education.

509-2 History and Philosophy of Music Education.

535-2 Contemporary Idioms.

540-1, 2, or 4 Applied Music.

545-4 (2, 2) Pedagogy of Music Theory.

550-2 School Music Administration and Supervision.

556-2 to 4 (2, 2) Advanced Conducting.

560-2 Seminar in Music Education.

566-1 to 12 (1 or 2 per semester) Ensemble.

567-1 to 8 Music Theater Workshop.

568-1 to 16 (1 to 8 per semester) Opera Workshop.

570-3 History of Opera.

573-3 Medieval Music.

574-3 Renaissance Music.

578-3 Twentieth Century Music.

579-3 to 6 (3, 3) Seminar in Music History and Literature.

580-2 to 4 (2, 2) Graduate Composition.

595-2 Music Document.

598-4 Graduate Recital.

599-2 to 6 Thesis.

Nursing (Program, Major, Courses)

The program will prepare the graduate to successfully pass the licensing examination for and to function successfully as a registered nurse. The entering student must be a graduate of an accredited school of practical nursing or its equivalent through formal or informal methods. Proficiency tests will determine the level of competencies within the nursing field and through the maximum use of individualized instruction and instructional technology, the student can complete the requirements at his own pace. This can generally be accomplished within one year.

Didactic instruction will be implemented mainly through a variety of multi-media teaching techniques with individualized assistance from the nurs-

ing faculty. Clinical experience will be gained through various cooperating hospital facilities in a designated geographical area of southern Illinois. Since the student will be traveling to several hospitals, it is essential that he have access to transportation. General education courses will be required in the areas of communication and social studies.

Facilities limit enrollment to twelve full-time students but, since each student progresses at his own pace, there is a possibility of openings during the academic year as students complete the requirements. In addition to gaining admission to the University, the applicant must demonstrate satisfactory levels of previous nursing skills and knowledge by taking the national Pre-Entrance Exam for Schools of Nursing and Nursing Achievement Exams prior to being admitted to the program. Requests for information regarding these examinations and other admission requirements should be directed to nursing, School of Technical Careers.

Additional expenses of approximately \$75 are required to cover the cost of uniforms, the pre-admission examinations, liability insurance, and other items.

A registered nurse may be employed in private offices, school systems, hospitals and clinics, nursing homes, industrial health clinics, or other health care facilities.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Nursing

<i>Graduation from an accredited school of practical nursing or equivalent—minimum required transfer of credit</i>	20
<i>General Studies</i>	12
GSD-5 hours (2 areas), GSB 202-3, GSB 203-4	

<i>Nursing 201, 202, and 203</i>	30
<i>Electives</i>	3

<i>Total</i>	65
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Courses

201-12 Nursing. Introduces the student to selected nursing problems in specialized and complex areas with emphasis on the comprehensive care of patients of all ages. Utilizing principles from the physical, biological, and behavioral sciences, the student will begin to identify nursing problems based on the conceptual framework of human needs. Lecture six hours; laboratory twelve hours. Prerequisite: consent of instructor.

202-12 Nursing. Emphasizes the problem-solving approach in a variety of clinical situations so that students will be able to develop skills needed for independent nursing judgments. Transition into graduate nurse role, experience in acute and extended care settings, community service agencies and professional group meetings, and development of leadership skills will be integral components of the course. Lecture six hours; laboratory twelve hours. Prerequisite: 201.

203-6 Nursing. Provides the student with practical experience utilizing all theory and knowledge of skills learned. It is expected that the student will have learned to be a safe practitioner function in group situations, relate to people of all ages—staff and patients—and effect change in health care delivery systems after graduation. Lecture three hours; laboratory six hours. Prerequisite: 202.

Nursing (Preprofessional Program)

The Nursing Division of Southern Illinois University at Edwardsville offers an educational program leading to a Bachelor of Science degree with a major in nursing. The curriculum is designed to prepare qualified individuals to function competently as beginning professional nurse practitioners; to participate

in providing a broad scope of health care in a variety of settings; to obtain a foundation for continued growth and graduate education. The curriculum assists students in developing the behaviors and abilities necessary to function therapeutically with people while achieving greater self-direction, self-realization, and professional identity in an era characterized by change.

The first two years of the four-year program may be completed at Southern Illinois University at Carbondale. During the first two years, the student must successfully complete all courses prerequisite to the nursing major. The student must then transfer to Southern Illinois University at Edwardsville. Information concerning these courses is available at the General Studies Academic Advisement Center.

All students are strongly urged to seek academic advisement for each semester in attendance. The grade of *C* or above is required in all nursing courses, all science courses, and General Studies Area A.

Occupational Education (Department, Major, Courses)

Programs are designed to prepare persons for teaching, supervisory, and leadership roles in schools, colleges, and industry. Students are made aware of and become knowledgeable about roles, relationships, and expertise in a variety of educational agencies.

Pre-occupational teaching encompasses a broad area of study in elementary and secondary schools. It involves the study of occupational clusters and other world of work orientation and exploration activities. Students may elect several career options including industrial arts teaching, cooperative education coordination, career development specialist, and pre-vocational teaching.

Secondary occupational teaching concerns specialized instruction in the vocational-technical occupations of machine-tool, electronics, drafting, automotives, nursing and other health, industrial-oriented, and personal and public service occupations. Persons following this program are certified to teach in high schools and area vocational schools. They may also teach in industry, private schools, and community junior colleges.

Occupational teaching involves instructing youth and adults in highly skilled occupational areas such as dental hygiene, electronics, practical nursing, automotives, aviation, health, and commercial art, which require basic and intermediate knowledge of science and mathematics as well as advanced knowledge of applications in a defined line of endeavor.

Persons who wish to complete a degree immediately after high school are advised to prepare for pre-vocational teaching. People with work experience or post-secondary technical or vocational education in a technical institute or junior college are advised to prepare for secondary occupational teaching or occupational teaching.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
Including GSA 101, 106, GSB 202, 212, GSD 101, 117, 153, GSD mathematics, GSE 201, 2 hours of GSE 100-114	
<i>Requirements for Major in Occupational Education</i>	75
Occupational Education 485, 489, 490	9
Specialization (See requirements listed below)	66
<i>Total</i>	120

OCCUPATIONAL EDUCATION MAJOR—PRE-OCCUPATIONAL TEACHING
SPECIALIZATION

Professional Education Requirements	24
See Teacher Education Program, page 68.	
Education 304b must be selected.	
Occupational Education 301, 425	6
Specialization Electives	36
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	66

OCCUPATIONAL EDUCATION MAJOR—SECONDARY OCCUPATIONAL TEACHING
SPECIALIZATION

Professional Education Requirements	24
See Teacher Education Program, page 68.	
Education 304b must be selected.	
Occupational Education 258 ¹ , and 259-26, 395-16; or	
258 and 259-42	42
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	66

OCCUPATIONAL EDUCATION MAJOR—OCCUPATIONAL TEACHING SPECIALIZATION

Occupational Education 258 ¹ and 259-38, 395-16, 419-6, 426,	
Guidance and Educational Psychology 307; or 258 and 259-54,	
419-6, 426, Guidance and Educational Psychology 307	66
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	66

¹Limit on 258 is 30 hours.

Courses

- 258-2 to 30 Occupational Experience.** Credit for documented experience in a teachable occupation or family of occupations. Prerequisite: 12 hours of *C* at SIU.
- 259-2 to 48 Occupational Subjects.** Credit for documented occupational study in accredited and selected other programs. Prerequisite: 12 hours of *C* at SIU.
- 300-15 (3, 3, 3, 3, 3) Occupational Simulation and Cluster Studies.** Occupational simulation and gaming activities. Occupational orientation and/or exploration. Community laboratory, films, and other methods. Team teaching also used.
- 301-3 Occupational Orientation and Exploration.** Introduction to occupational orientation and exploration activities for occupational education programs at the junior high and early senior high school levels. Career development processes are examined.
- 302-3 Construction Methods for Primary Teachers.** Various media such as wood, metal, and paper. Acquainting the primary teacher with the materials, tools, and processes which students at the primary level can manipulate and use in the classroom. Laboratory.
- 303-3 Diversified Crafts for Teachers and Recreation Leaders.** Experience in constructional activities involving the use of wood, metals, leathers, plastics, reed, raffia, clay, and other materials adaptable to the needs and interests of camp counselors and elementary school leaders. Laboratory.
- 315-2 Leadership of Youth and Peer Groups.** (See Agricultural Industries 315.)
- 395-2 to 24 Occupational Internship.** (Same as Home Economics Education 395.) Includes job skills and knowledges, management-worker relations, supervised instruction, conferences and evaluations. Prerequisite: consent of coordinator.
- 419-2 to 12 Occupational Teaching Internship.** Experience in working with special intern and post-high school technical training programs in approved centers. The teacher will follow the program of the supervisors of the primary specialization in both regular and extra-class activities. Prerequisite: 395-10 hours, 490-3 hours.
- 425-3 Introduction to Cooperative Vocational Education.** (Same as Business Education and Home Economics Education 425.) Philosophy and objectives of cooperative vocational programs and project plan. Study of competencies required of cooperative education teacher-coordinators. Preparation of instructional materials and conducting related classes. Work and field experiences, observations, field trips.

426-3 Post-Secondary Cooperative Vocational Education Programs. (Same as Home Economics Education 418.) An introductory study of the philosophy, principles, development, implementation, and operation of cooperative education programs at the community junior college.

450-1 to 5 Advanced Occupational Skills and Knowledges. Modern occupational practice in selected fields. For experienced professionals seeking advanced techniques in specialized areas of occupational education. Prerequisite: intermediate level study in the specialty.

485-3 Principles and Philosophies of Vocational and Technical Education. Team teaching used. Nature and purposes of practical arts, vocational and technical education, their relationships and differences, and the place of each in preparing people for the world of work.

489-3 Defining and Developing Occupational Programs. Identifying, compiling, and organizing occupational data necessary to development and preparation of occupationally related learning experiences.

490-3 Preparing Occupational Course Materials. Development and preparation of occupationally related learning experiences.

492-2 to 5 Special Problems. Assistance and guidance in the investigation and solution of occupational education problems. Prerequisite: consent of instructor and coordinator.

494-2 to 6 Practicum. Applications of occupational skills and knowledge. Cooperative arrangements with corporations and professional agencies provide opportunity to study under specialists. Prerequisite: 20 hours in specialty.

500-3 Research in Occupational Education.

501-3 Legislation, Organization, and Application of Occupational Education.

502-3 Evaluation of Occupational Education Programs.

505-6 (3, 3) Policy Implementation and Supervision of Occupational Education.

510-3 Planning Occupational Education Facilities.

519-1 to 16 Internship.

525-3 Cooperative Vocational-Technical Education.

526-3 Cooperative Post-Secondary Occupational Education.

541-3 Occupational Information.

550-3 Occupational Education in Diverse Settings.

560-1 to 9 New Developments in Occupational Education.

575-3 Characteristics of Occupational Education Clientele.

581-3 Occupational Education Planning and Policy Development.

589-3 Articulated Occupational Education Programs.

593-2 to 6 Special Investigations.

599-2 to 6 Thesis.

600-1 to 36 (1 to 16 per semester) Dissertation.

Philosophy (Department, Major, Courses)

The student electing to major in philosophy should consult the department's director of undergraduate studies, who will then assign him to an adviser. Prospective students are advised to take at least one philosophy course at the 100 or 200 level.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	15
<i>Requirements for Major in Philosophy</i>	28
Philosophy 304 and 305	6
At least two of the following: Philosophy 300,	
306, 320, 340, 342	6
At least two 400-level philosophy courses	6-8
Philosophy electives to complete 28 hours, 2	
or 3 of which may be selected from the	
100 and 200 level	8-10

Minor	15 ¹
Electives	17-32
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Total	120

Minor

A minor in philosophy requires 15 hours, 6 of which may be selected from philosophy courses offered at the 100 and 200 level and 6 of which should be selected from the courses listed above for the major. Philosophy 304 and 305 are recommended.²

¹The minor may be waived by the department.
²Students completing a minor in philosophy for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Honors

Honors in philosophy will be granted to eligible majors who successfully complete two semesters of Philosophy 397, maintain a 3.25 average in philosophy and a 3.00 overall grade point average, and have their written work in one Undergraduate Philosophy Seminar approved by a faculty committee.

Courses

- 200-3 Types of Philosophy: An Introduction.** Survey of the traditional branches and problems of philosophy, such as religion, metaphysics, epistemology, ethics, political theory, aesthetics, and history. Elective Pass/Fail.
- 300-3 Elementary Metaphysics.** Presentation of answers to the most general problems of existence. An attempt to unify all scientific approaches to reality through the laying down of common principles. Elective Pass/Fail.
- 301-3 Philosophy of Religion.** (Same as Religious Studies 301.) An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality. Elective Pass/Fail.
- 304-3 Ancient Philosophy.** Survey of western philosophy from the pre-Socratics, Plato, and Aristotle through the Middle Ages. Elective Pass/Fail.
- 305-3 Modern Philosophy.** A survey of western philosophy from Bacon and Descartes through Kant. Elective Pass/Fail.
- 306-3 Nineteenth Century Philosophy.** Survey of European philosophy during the nineteenth century. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.
- 311-3 Indian Philosophy.** Historical and comparative study of Hinduism, Jainism, and early Buddhism. Elective Pass/Fail.
- 312-3 Chinese Philosophy.** Historical and comparative study of Confucianism, Taoism, and Mahayana Buddhism. Elective Pass/Fail.
- 320-3 Deductive Logic.** Main forms of deductive inference. Emphasis on the use of the symbolism of modern logic to evaluate inferences. Elective Pass/Fail.
- 340-3 Ethical Theories.** Nature of ethics and morality, ethical skepticism, emotivism, ethical relativism, and representative universalistic ethics. Bentham, Mill, Aristotle, Kant, Blanshard, and Brightman. Elective Pass/Fail.
- 342-3 Social Philosophy.** Discussion of contemporary institutions designed to achieve socially desirable goals (e.g., guaranteeing equality of opportunity, protecting individual liberties, assuring a fair distribution of wealth, minimizing violent behavior) and the philosophical theories that serve as the foundation for the continued existence or reform or abolition of these institutions (e.g., the theories of Hobbes, Marx, Mill, and Marcuse). Elective Pass/Fail.
- 355-3 Philosophy of Education.** (See Educational Administration and Foundations 354.) Elective Pass/Fail.
- 371-3 Introduction to Contemporary Phenomenology.** Introductory survey of individual thinkers and questions in the contemporary phenomenological tradition: Husserl, Sartre, Merleau-Ponty, Levinas, and Ricoeur. Elective Pass/Fail.
- 375-3 Philosophical Foundations of Ecology.** Study of the conceptual foundations of the ecological or environmental outlook, the differences that may exist between those foundations and other philosophical frameworks, and the possible changes in general patterns of thought that may result from the increasing importance and widening application of ecological sciences.

378-3 Marxism and Technological Society. A critical analysis and presentation of developments in Marxism in the 20th century: Lukacs, Althusser, Gramsci, Benjamin, Habermas, and Marcuse. Course is directed primarily toward those interested in the sociological, aesthetic, and literary aspects of the critical tradition as it bears on the critique of technological society. Elective Pass/Fail.

389-3 Existential Philosophy. Surveys the two main sources of existentialism, the life philosophies of Kierkegaard and Nietzsche and the phenomenology of Husserl, and introduces the major philosophical themes of representative thinkers: J. P. Sartre, M. Heidegger, G. Marcel, and others. Elective Pass/Fail.

397-8 (4, 4) Undergraduate Philosophy Seminar. Small group discussion of topics in philosophy.

400-3 Contemporary Mind. Analysis of thought-patterns and motivations dominating the American mind during the present decade of the 20th Century. Elective Pass/Fail.

406-3 Philosophy of Biology. Leading concepts of biological sciences: species, evolution, life, organism and part, etc. Abstract ideas of biology are related, wherever possible, to specific experiments recorded in scientific literature. Prerequisite: 300 or 320, and three laboratory or field courses in the biological sciences or consent of instructor. Elective Pass/Fail.

415-3 Logic of Social Sciences. (Same as Sociology 415.) Logical and epistemological examination of the social sciences as types of knowledge. Basic problems in philosophy of science with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy. Elective Pass/Fail.

420-3 Advanced Logic. Study of topics in logical theory and/or formal logic not treated in 320. Prerequisite: 320. Elective Pass/Fail.

425-3 Philosophy of Language. Introduction to basic problems in the philosophy of language, including alternative theories of meaning and reference and the relation between meaning and intention. Elective Pass/Fail.

426-3 Introduction to Mathematical Logic. (See Mathematics 426.)

432-4 Philosophy of Mathematics. (Same as Mathematics 432.) Philosophical problems of mathematics. Epistemological issues raised by non-Euclidean geometry. Representative writers on foundations, including nominalists, intuitionists, logicians and formalists. Ontological commitment, conventionalist theories of mathematical truth, logical paradoxes, and alternative set theories; significance of the theorems of Godel and Skolem-Lownheim. Prerequisite: 320 or 15 hours mathematics. Elective Pass/Fail.

435-4 Scientific Method. Critical survey of influential descriptions of scientific method, with emphasis on natural sciences. Topics include statistical and inductive probability, crucial experiments, explanation and prediction, interpretation of scientific terms and sentences, role of reasoning in discovery, and value judgments in research. Elective Pass/Fail.

441-4 Philosophy of Politics. (Same as Political Science 403.) Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relations of economics and social studies to political theory. Prerequisite: 340 or GSC 102 or consent of instructor. Elective Pass/Fail.

443-4 Philosophy of History. Classical and contemporary reflections on the nature of history and historical knowledge as the basis for dealing with the humanities. Prerequisite: consent of instructor. Elective Pass/Fail.

460-4 Philosophy of Art. The definition of art, its relation to science, culture and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Elective Pass/Fail.

470-6 (3, 3) Greek Philosophy. (a) Plato; (b) Aristotle. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.

471-4 Medieval Philosophy. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.

472-4 The Rationalists. Study of one or more of the following: Descartes, Malebranche, Spinoza, Leibniz, Wolff. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

473-6 (3, 3) The Empiricists. (a) Locke; (b) Hume. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

474-9 (3, 3, 3) 19th Century Philosophers. (a) Kant; (b) Hegel; (c) Marx. Prerequisite: 306 or consent of instructor.

477-4 Latin American Philosophy. A survey of philosophic thought in Latin America from colonial times through 19th century positivism and the reactions against it, up to recent trends. Reading of original texts in English translation. Discussions and reports. Elective Pass/Fail.

478-4 Latin American Thought. Elective Pass/Fail.

482-3 Recent European Philosophy. Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture and politics. Elective Pass/Fail.

486-3 Early American Philosophy. From the Colonial period to the Civil War. Elective Pass/Fail.

487-3 Recent American Philosophy. Thought of Howison , Royce, Peirce, James, Dewey and others. Elective Pass/Fail.

490-2 to 8 Special Problems. Hours and credits to be arranged. Courses for qualified seniors and graduates who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics for individual study and papers or for group study. Prerequisite: consent of instructor required in all cases. Elective Pass/Fail.

496-2 to 4 Independent Studies in Classical Studies. (See Classical Studies 496.)

500-3 Metaphysics.

501-3 Philosophy of Religion.

503-3 Philosophical Ideas in Literature.

510-3 Indian Philosophy.

511-3 Chinese Philosophy.

512-3 Philosophy of Culture.

515-3 Theory of Nature.

520-3 Logic.

524-6 (3, 3) Analytic Philosophy.

530-3 Theory of Knowledge.

531-3 Whitehead.

542-3 Political and Legal Philosophy.

545-3 Ethics.

550-3 Theory of Value.

560-3 Aesthetics.

570-3 American Idealism.

572-3 20th Century Philosophy.

575-3 to 9 (3 per topic) Contemporary Continental Philosophy.

577-6 (3, 3) Pragmatism.

581-3 Plato.

582-3 Aristotle.

587-3 Kant.

588-3 Hegel.

590-2 to 12 (2 to 4 per topic) General Graduate Seminar.

591-1 to 16 Readings in Philosophy.

595-2 Teaching Philosophy.

599-2 to 6 Thesis.

600-3 to 32 (3 to 16 per semester) Dissertation.

Physical Education for Men (Department, Major, Courses)

The Department of Physical Education for Men offers several categories of programs which are intended to prepare young men for positions which are highly related to the use of physical activities as a medium for education.

The first category permits a major in physical education with emphasis upon certification for teaching a comprehensive program in both elementary and secondary schools as well as in colleges and universities. The program meets the requirements of state departments of education and other agencies which have adopted professional standards. The laboratory and classroom experiences in this program consist of the basic and applied sciences; physical skill classes which include a large variety of team and individual activities from sport, exercise, and dance; and methods of teaching courses.

The second category includes specializations in clinical fields. These programs which vary from 15 to 20 semester hours are available to all male students in any major field of study. Majors in non-teaching fields may enhance summer or regular employment with agencies which foster programs related to these clinical fields. The clinical fields are: adapted physical educa-

tion (programs conducted in school settings, clinics, hospitals, residential facilities—private or governmental, preschool and early childhood centers); aquatics (comprehensive preparation in the broad field of aquatics as one of the most profound elements in leisure life); athletic coaching (a variety of sport specializations available under nationally recognized teachers and coaches for staffing competitive programs in schools, community and institutional agencies); and athletic training (positions which complement a medical supervisory team in the care and prevention of athletic injuries and in directing physical conditioning and rehabilitation programs).

The third category offers an emphasis of courses in physical education but permits considerable freedom in designing a program consistent with one's future plans. The program does not provide for teacher certification. It qualifies young men for positions as specialists in a wide variety of social, community, and institutional agencies.

In all programs, students are brought into contact with faculty whose achievement encompass research, teaching, and international renown for athletic feats.

Bachelor of Science Degree, College of Education

General Studies Requirements 45
Including GSA 209; GSE 201 and 2 specified GSE courses

Requirements for Major in Physical Education for Men 38
Physiology 300 3
Physical Education for Men 201 (2) + 2
Physical Education for Men 200-6, 202, 203, 210
303, 304, 305, 320, 325, 355A, 357
370, 376 34

Professional Education Requirements 24
See Teacher Education Program, page 68.

Electives 12

Total 120

COURSES IN CLINICAL FIELDS

Available to All Degree Students

Adapted Physical Education 20
GSA 209 3
Physical Education for Men 205, 303, 304, 305,
355B 9
Physical Therapist Assistant 202, 209 5
Physiology 300 3

Aquatics 17
Physical Education for Men 208, 355E
Four hours from 316, 317, 418
Six hours from 308a, b, c, d

Athletic Training 19
GSA 209 3

Physical Education for Men 303, 304, 355D, 366, 376	10
Physiology 300	3
Physical Therapist Assistant 209	3
<i>Athletic Coaching</i>	11
Physical Education for Men 356, 365	3.5
Elective courses	7.5
Physical Education for Men 170, 200c, 330, 345	

Courses

170-1.5 to 3 (1.5 per part) Varsity Sports. Participation as a member of a varsity sport. Students may enroll in a maximum of two different sports, but may not repeat the same sport for additional credit. Enrollment in courses are by (a) Football, (b) Basketball, (c) Track, (d) Tennis, (e) Gymnastics, (f) Baseball, (g) Golf, (h) Swimming, (i) Cross-country, (j) Wrestling. These courses will stress physical fitness, improvement of individual and team skills, team cohesion, proper conduct on and off the field of play, and knowledge and interpretation of rules.

200-6.3 (.8, .8, 1.5, .8, .8, .8) Methods of Teaching Physical Activity Skills. These series of courses emphasize the methods of teaching the skills and techniques of a variety of physical activities common to physical education and recreation programs. Each course meets one-half semester three times a week for a single period. Additionally, students are encouraged to practice these skills in game situations. The courses by enrollment are (a) Flag Football, Soccer, Speedball; (b) Gymnastics; (c) Exercise, Weight Training; (d) Swimming; (e) Racquetball, Handball, Paddle Tennis; (f) Wrestling; (g) Track and Field. Any combination within a course may be substituted by previous work or proficiency test. No single activity can be waived.

201-4 (.5, .5, .5, .5, .5, .5, .5, .5) Teaching Physical Activity Skills. Emphasizes the methods of teaching the skills and techniques of a variety of physical activities common to physical education and recreation programs. Each course meets one-half semester twice a week for a single period. Additionally, students are encouraged to practice these skills in game situations. The courses by enrollment are (a) Golf; (b) Badminton and Bowling; (c) Basketball; (d) Tennis; (e) Archery; (f) Volleyball; (g) Basic Rhythms; (h) Softball. Any combination within a course may be substituted by previous work or proficiency test. No single activity can be waived.

202-2 Body Mechanics and Exploratory Movement in Physical Activities for Primary Children K thru Three. Provides a comprehensive coverage of the educational elements in basic movement education, its interpretation analysis terminology structure, methods of teaching and evaluative techniques. Observatory experiences provided.

203-3 Fundamental Skills and Activities of Low Organization for Children Grades Four thru Six. Presents the entire scope of the physical education program for children in the intermediate grades. Course objectives, program planning, facilities, supplies and equipment, the basic activities representative of a comprehensive sports and games program, and the design of progress reports. Observatory experiences provided.

205-1 Physical Problems of the School-Age Student. Reviews the common physical disabilities which occur in children. Examines both acute and chronic injuries and diseases with reference to the type of physical activities best adopted to the physical problems. Prerequisite: Physiology 300.

208-3 Instructor of Swimming. Designed to prepare the student to teach beginning swimming through lifesaving to pre-school through adult groups.

210-2 Motor Learning. Presents the basic learning principles which underlie motor skill performances associated with physical activity and sports and examines the variables affecting skill learning. Prerequisite: at least sophomore standing.

273-4 (2, 2) Dance Through the Ages. (See Theater 273)

303-2 Kinesiology. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical education activities. Prerequisite: Physiology 300.

304-2 Mechanical Bases of Human Movement. Applies body mechanics with application of mechanical laws and principles to performance in physical activities. Prerequisite: 303.

305-2 Physical Education for Special Students. Understanding the characteristics, limitations, and activity needs of students with physical, mental, or emotional limitations; and procedures for organizing and conducting a physical education program for such special students. Prerequisite: at least junior standing.

308-2 to 6 Instructor of Aquatics. A series of courses designed to prepare students to teach specific recreational aquatic areas. Lectures on theory and teaching methodology.

(a)—2 Handicapped Swimming

(b)—2 Skin Diving

(c)—2 Scuba Diving

(d)—2 Canoeing

309-4 (2, 2) Methods of Teaching Dance. (See Physical Education-Women 309.)

312-3 Dance Philosophies. (See Theater 312.)

313-3 Dance Composition. (See Physical Education-Women 313.)

316-2 Aquatics Facilities Management. Learning experiences designed to aid in the development of aquatic specialists who can efficiently work toward satisfactory solutions to the problems inherent in functional design, operation, and maintenance of aquatic facilities that are associated with schools, municipalities, and other organizations.

317-2 Lifeguarding. The skills and techniques for preparing selected individuals related to the aquatic lifeguarding task and training in the specifics of being a part of the aquatic lifeguarding system. Prerequisite: First Aid Certification and pass swimming test.

318-2 Water Safety Instructor. Development of personal skills and methods of teaching swimming and lifesaving. American Red Cross water safety instructor certificate may be earned. Prerequisite: current Red Cross senior lifesaving card. Elective Pass/Fail.

320-3 Physiological Basis of Human Movement. Immediate and long range effects of physical activity on the various body systems and the integrative nature of various body functions and environmental influences on human performance and efficiency. Prerequisite: GSA 209 or equivalent.

325-2 Principles of Physical Education. Designs a structure of knowledge which underlies the practice of physical education with particular reference to a philosophical framework which embraces the moral and ethical values related to the function of personnel in the environment of physical education and competitive sport.

330-1 to 9 (3, 3, 3) or (3, 3, 1.5, 1.5) Techniques and Theory of Coaching. Emphasis is placed upon the analysis and coaching of individual skills and team play as well as the strategy for the competitive situations. Each course includes the essential techniques in each individual position, development of a team, conditioning, conduct of practice sessions, and preparation of individuals and teams for competition. The courses by enrollment are (a) Basketball, (b) Football, (c) Swimming, (d) Baseball, (e) Track and Field, (f) Wrestling, (g) Tennis, (h) Gymnastics, (i) Golf. Practicum and seminar experience available in 355.

331-3 Advanced Scuba. Includes advanced underwater swimming techniques and 14 hours openwater diving experience. Leads to YMCA advanced certification. Prerequisite: GSE 101E or consent of instructor.

332-1 Advanced Gymnastics. Opportunities to learn more advanced skills in stunts and tumbling and apparatus for student who possess the basic gymnastic skills. Develops judging competencies of gymnastic performances. Surveys gymnastic events on interscholastic and tournament level.

333-1 or 2 Advanced Kodokan Judo. Develops knowledge, skill, and appreciation for this specialized activity. Include the principles, techniques and essential cultural relationships attendant upon the activity. Provides for women's judo, training methods, and world-wide view of the subject.

334-1 or 2 Advanced Distance Running. The theory and technique of cross-country and road running with emphasis on the training basis and participation in runs of three to ten miles distance. Prerequisite: GSE 104N or equivalent.

335-1 or 2 Advanced Orienteering. Designed to prepare the student in the essential aspects, both theoretical and practical, of orienteering so that he is equipped to teach and/or organize orienteering activities; to prepare leadership to contribute toward an expanding, popular program.

336-1 or 2 Self Defense and Restraint. Development of the fundamental skills of self defense and restraint, determination of one's limitations, and improvement of skill or general efficiency through speeding up reflex action, inspiring confidence and gaining a knowledge of the basic principles of the activity.

337-1 Canoeing and Boating. Aims to teach proficiency in the skills and theory of basic canoeing both tandem and solo which will result in quality performance on the part of the student in all environmental and weather conditions. Prerequisite: maintain safe position in deep water while fully clothed for ten minutes.

345-3 (1.5, 1.5) Officiating of Sports. Officiating rules and their interpretation in (a) Fall and Winter sports — football, basketball, wrestling, gymnastics (b) Winter and Spring sports — swimming, track and field, baseball, softball, tennis.

355-2 Seminar and Practicum in Teaching Principles and Techniques. Involves a clinical experience as pre-student teaching in which the assignment may be to one of the

following areas: (a) instructional classes in school or college or children in community sponsored programs, (b) physically handicapped children, (c) athletic coaching, (d) athletic training and (e) aquatics. It also includes supplementary meeting in seminar for experience interchange and review of teaching principles.

356-2 Introduction to Athletic Training. Designed for the non-physical education major who desires to acquire the minimum essentials for athletic training. Principle of training and conditioning, the injury conditions in various body parts, and primary treatment procedures.

357-3 Organization and Administration of Physical Education. Consideration of the special problems related to the organization and administration of the curriculum, facilities and equipment, personnel management, budget making, legal liability, and public relations.

365-1.5 Management of Interschool Athletics. A treatment of the philosophy and background of athletics in the total high school educational program; the national and state associations which guide athletic administration; the duties and responsibilities of the athletic director; and the many factors responsible for the control and administration of desirable programs.

366-2 Training Room Techniques. Intended for the student who wished to complete a specialty as athletic trainer. Provides knowledge concerning the organization and administration of a training room, the installation and use of its modalities, and general procedures on training room operational functions.

370-3 Tests and Measurements in Physical Education. The theory of measurement in physical education, the selection and administration of appropriate tests of motor skill and the interpretation of results. Prerequisite: at least junior standing.

374-1 Advanced Folk Dance. (See Physical Education — Women 374.)

376-2 Emergency Care and Prevention of Physical Education and Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. Lecture and laboratory sessions. Prerequisite: Physiology 300.

379-2 Advanced Dance Composition. (See Theater 379.)

400-3 Evaluation in Physical Education. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices (predominantly tests of motor skill); structure and use of tests; administering the testing program; and statistical manipulation and interpretation and application of results.

402-2 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports. Planning and coordinating extramural activities commonly associated with physical education.

403-2 The Adaptation of Physical and Recreational Activities for the Special Student. Movement performance as applied to children of special populations. Study of movement theory and its application to developmental needs and motor-perceptual performance.

404-2 The Teaching of Sports. Principles of learning applied to selected sports; progressions, teaching methods, and related summaries of research.

407-2 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries. The application of scientific principles to the theoretical and practical methods of preventing and treating athletic injuries.

408-2 Physical Fitness: Its Role and Application in Education. An analysis of physical fitness as it relates to the total well-being of people. Specific units on the fitness parameters, hypokinetic disease and physical inactivity, stress, current level of fitness, training programs, and the beneficial aspects of regular exercise. Major emphasis is placed upon incorporating current thinking on physical fitness into the development of teaching models.

410-3 Behavioral Foundations of Coaching. Behavioral problems of the athlete and the coach and possible solutions to such problems. Application of behavioral principles and theories as a basis for understanding the interaction between coach and student in the athletic environment.

415-1 to 6 (1 per topic) Workshop in Sports. A concentrated experience in the latest theories and techniques of selected sports activities. Emphasis is placed on individual and team drills, instructional materials and improved teaching methods. One semester hour for each workshop. A total of four hours only of such workshop experience may be credited toward the master's degree. Workshop titles are: (a) Baseball, (b) Basketball, (c) Field Hockey, (d) Football, (e) Gymnastics, (f) Soccer, (g) Softball, (h) Swimming, (i) Track and Field, (j) Volleyball.

416-3 Current Theories and Practices in the Teaching of Dance. (Same as Theater 416.) Designed to aid a critical evaluation and analysis of dance as an educational tool, from creative dance for children through dance in the University curriculum.

Specific techniques, creative ideas, class organization, and general evaluation will be included. All students will be expected to design and instruct a lesson under supervision of the instructor. Notebook required. Prerequisite: GSE 113d or Physical Education for Women 115h and 240.

418-2 Administration of Aquatics. The study of comprehensive aquatic programs, their implementation and coordination.

420-3 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Requires purchase of laboratory manual. Prerequisite: GSA 209 or equivalent.

444-2 to 6 Contemporary Dance Workshop. Dance technique and theory, composition, improvisation, and production. Advanced study of the problems of choreography and production in their presentation as theater. Public performance is required. Prerequisite: one year of technique and theory or equivalent.

493-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. (a) Dance, (b) Kinesiology, (c) Measurement, (d) Motor Development, (e) Physiology of Exercise, (f) History and Philosophy. Written report required. Prerequisite: consent of adviser and department chairman.

494-2 (1, 1) Practicum in Physical Education. Supervised practical experience at the appropriate level in selected physical education activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning physical education facilities. Prerequisite: consent of adviser.

500-3 Techniques of Research.

501-3 Curriculum in Physical Education.

503-2 Seminar in Physical Education.

505-2 to 6 (2 per topic) Topical Seminar in Physical Education.

506-2 Topical Seminar in the Assessment of Motor Performance.

508-2 Administration of Athletics.

510-2 Motor Development.

511-2 Analysis of Human Physical Movement.

512-2 Biomechanics of Human Motion.

513-3 Perceptual Motor Learning of Physical Skills.

515-3 Body Composition and Human Physical Performance.

517-2 Athletic and Physical Education Facilities Design, Construction, and Maintenance.

520-3 Metabolic Analysis of Human Activity.

590-1 to 4 Readings in Physical Education.

592-3 Research Projects in Physical Education.

599-3 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Physical Education for Women (Department, Major, Courses)

The physical education for women major qualifies young people for positions as teachers, coaches, or specialists in public and private elementary or secondary schools, colleges, and universities, as well as in other social agencies which promote physical activity programs. Courses are designed to meet the requirements of state departments of education and other agencies which have adopted professional standards.

Complete and integrated experience in teaching physical education and assisting in coaching under qualified supervisors is provided in the cooperating schools in the area. Added experiences are gained through membership in the Physical Education Club, membership in professional organizations, participation on intramural and inter-collegiate teams, assisting in service classes, and working with recreational and school groups in teaching techniques of various activities.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
GSA 209, GSD 153, GSE 201	

<i>Requirements for Major in Physical Education for Women</i>	51
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Physical Education for Women 115a, 115b, 115c 115d, 115e, 115f, 115g, 115h, 115i, 115j, 115k, 115l, 115m, 115n, 115o, 115p, 209, 210, 303, 304-3, 305, 309a or b, 320 325, 350, 352, 357, 370	(2) + 39
Health Education 334	3
Physiology 300	3
Electives in Physical Education for Women	6
These may be taken in any departmental or intermediate level GSE courses	
Professional Education Requirements	24
See Teacher Education Program, page 68.	
Total	120

A minor is required for the Standard Secondary Certificate but not for the Standard Special Certificate.

Anyone who transfers from another university and wishes to major in physical education for women must complete a minimum of 10 hours in physical education senior college courses at Southern Illinois University at Carbondale.

A 2.25 average in the major is required for student teaching.

Activity courses taken as prerequisites for method courses should be Physical Education for Women courses. A grade of C must be obtained in activity courses which are applied as prerequisites for method courses.

If GSE courses are taken in lieu of Physical Education for Women courses, a C level of proficiency according to Physical Education for Women standards must be demonstrated before unconditional acceptance in the respective methods course is granted.

Minor in Dance

Requirements for Minor in Dance	23
Physical Education for Women 115f, 115h, 209, 210, 230A, 240A, 240B, 273B, 309a, 309b, 312, 313	

A public performance is required (non-credit) through participation in Dance Club or the Repertory Company.

Suggested courses are Physical Education for Women 230B, 240C, 273A, 374, 416.

Activity courses taken as prerequisites for method courses should be Physical Education for Women courses. A grade of C must be obtained in activity courses which are applied as prerequisites for Physical Education for Women method courses.

If GSE courses are taken in lieu of Physical Education for Women courses, a C level of proficiency according to Physical Education for Women standards must be demonstrated before unconditional acceptance in the respective methods course is granted.

Minor in Physical Education for Women

REQUIREMENTS FOR MINOR IN PHYSICAL EDUCATION FOR WOMEN WITH SPECIALIZATION FOR THE HIGH SCHOOL TEACHER	21.5
Physical Education for Women 115b, 115c, 115d, 115f, 115h, 115i, 115n, 115o, 115p, 209, 210, 309a, or 309b, 304-3, 325 Health Education 334	

Activity courses taken as prerequisites for method courses should be Physical Education for Women courses. A grade of *C* must be obtained in activity courses which are applied as prerequisites for Physical Education for Women method courses.

If GSE courses are taken in lieu of Physical Education for Women courses, a *C* level of proficiency according to Physical Education for Women standards must be demonstrated before unconditional acceptance in the respective methods courses is granted.

REQUIREMENTS FOR MINOR IN PHYSICAL EDUCATION FOR WOMEN WITH

SPECIALIZATION FOR THE ELEMENTARY SCHOOL TEACHERS 21

Physical Education for Women 115f, 115n, 115o, 210,
304d, 304j, 319, 325, 356b, plus 7 hours of electives
(3 in sport activity courses).

Electives may be taken from Physical Education
for Women 115c, 115d, 115h, 115i, 115k, 115l,
115p, 304a, 304c, 304f, 304k, 305, 309a, 309b,
355, and Health Education 334.

Activity courses taken as prerequisites for method courses should be Physical Education for Women courses. A grade of *C* must be obtained in activity courses which are applied as prerequisites for Physical Education for Women method courses.

If GSE courses are taken in lieu of Physical Education for Women courses, a *C* level of proficiency according to Physical Education for Women standards must be demonstrated before unconditional acceptance in the respective methods course is granted.

¹If GSE courses are taken in lieu of Physical Education for Women courses, a *C* level of proficiency according to Physical Education for Women standards must be demonstrated before unconditional acceptance in the respective methods course is granted.

Courses

115a-.5 Archery. Physical education uniform, tennis shoes, and current rule book required.

115b-1 Badminton. Physical education uniform, tennis shoes, and current rule book required.

115c-1 Basketball. Physical education uniform, tennis shoes and current rule book required.

115d-.5 Exercise for Fitness. Physical education uniform and tennis shoes required.

115e-1 Field Hockey. Physical education uniform, tennis shoes and current rule book required.

115f-1 Folk and Square Dance. Physical education uniform and tennis shoes required.

115g-.5 Golf. Physical education uniform, tennis shoes and current rule book required.

115h-1 Beginning Contemporary Dance. Physical education uniform and tennis shoes required.

115i-1 Soccer and Speedball. Physical education uniform, tennis shoes, and current rule book required.

115j-.5 Bowling. Lane fee and shoe rental fee required.

115k-1 Softball. Physical education uniform, tennis shoes, and current rule book required.

115l-1 Intermediate Swimming. Bathing cap and current rule book required. Prerequisite: Pass beginning swimming test.

115m-1 Tennis. Physical education uniform, tennis shoes, and current rule book required.

115n-1 Track and Field. Physical education uniform, tennis shoes, and current rule book required.

115o-1 Tumbling and Gymnastics. Physical education uniform, tennis shoes and current rule book required.

115p-1 Volleyball. Physical education uniform, tennis shoes, and current rule book required.

209-1 Rhythmic Analysis. The analysis of rhythm as related specifically to motor learning. Prerequisite: 115f, h.

210-2 Motor Learning. Consideration of learning principles which are basic to motor skill performances and examination of the variables affecting skill learning. Prerequisite: at least sophomore standing.

213-2 Stage Movement. (Same as Theater 213.) Experiences in movement and improvisation for the performing artist.

218-1 Intermediate Fencing. Prerequisite: GSE 114m.

229-1 Intermediate Golf. Prerequisite: 115g.

230A-2 Beginning Techniques in Classical Ballet. (See Theater 230A.)

230B-2 Intermediate Techniques in Classical Ballet. (See Theater 230B.) Prerequisite: 230A.

230C-2 to 14 Advanced Techniques in Classical Ballet. (See Theater 230C.) Prerequisite: 230B.

240A-2 Beginning Techniques of Contemporary Dance. (See Theater 240A.)

240B-2 Intermediate Techniques of Contemporary Dance. (See Theater 240B.) Prerequisite: 240A.

240C-2 to 16. Advanced Techniques of Contemporary Dance. (See Theater 240C.) Prerequisite: 240B.

258-1 to 5 Work Experience. The student receives credit for work experiences. Credit is awarded for many practical experiences in camps, recreation, YWCA, civic groups, etc. Prerequisite: 12 hours of C. Mandatory Pass/Fail.

271-1 Sailing.

273-4 (2, 2) History of the Dance. (Same as Theater 273.) (a) The study of dance from primitive sources through the 19th century. (b) The study of dance as an art form in the 20th century.

301-1 Techniques of Teaching Recreational Sports. Analysis and methods of teaching recreational sports.

302-1 Teaching Practicum. Laboratory experience with children in a school, or recreation setting or assisting in a GSE course at the University. Laboratory experience may also be arranged with special populations of children. Prerequisite: consent of department and junior standing. Mandatory Pass/Fail.

303-3 Kinesiology. The mechanical analysis of physical education activities through the study of joint and muscle action. Prerequisite: Physiology 300.

304-1 to 11 (1 per part) Techniques of Teaching Sports. Methods of teaching, construction of daily lesson plans, and analysis of techniques. Physical education uniform, tennis shoes, and current rule book is required for each 304 class. For each class including techniques of officiating, a minimal fee is charged. (a) Methods of Teaching Soccer-Speedball. Prerequisite: 115i, 210; (b) Methods of Teaching Field Hockey. Prerequisite: 115e, 210; (c) Methods of Teaching Basketball. Prerequisite: 115c, 210; (d) Methods of Teaching Gymnastics and Tumbling. Prerequisite: 115o, 210; (e) Methods of Teaching Tennis. Prerequisite: 115m, 210; (f) Methods of Teaching Volleyball. Prerequisite: 115p, 210; (g) Methods of Teaching Archery. Prerequisite: 115a, 210; (h) Methods of Teaching Badminton. Prerequisite: 115b, 210; (i) Methods of Teaching Golf. Prerequisite: 115g, 210 (j) Methods of Teaching Track and Field. Prerequisite: 115n, 210; (k) Methods of Teaching Softball. Prerequisite: 115k, 210.

305-2 Physical Education for Special Students. Understanding the characteristics, limitations, and activity needs of students with physical, mental, or emotional limitations; and procedures for organizing and conducting a physical education program for such special students. Prerequisite: at least junior standing.

309-4 (2, 2) Methods of Teaching Dance. (Same as Physical Education — Men, Theater 309.) Teaching each of the various types of dance, including fundamental progressions and composition in each type. Physical education uniform and tennis shoes required. (a) Folk and Square. Prerequisite: 115f, 209, 210. (b) Modern. Prerequisite: 115h, 209, 210.

312-3 Dance Philosophies. (See Theater 312.)

313-3 Dance Composition. (Same as Theater 313.) Introduction to choreography as an art form with special emphasis given to the use of space, time, and energy. Prerequisite: 115h, 213.

316-1 Advanced Swimming. Prerequisite: 115l. Elective Pass/Fail.

318-2 Water Safety Instructor. Development of personal skills and methods of teaching swimming and lifesaving. American Red Cross Water Safety Instructor Certificate may be earned. Bathing cap required. Prerequisite: current Red Cross senior lifesaving card. Elective Pass/Fail.

319-3 Physical Activity for Children and Youth. Developing activities for perceptual-motor development and skill acquisition appropriate for different age levels of children and youth. Tennis shoes required. Dress must permit ease of movement.

Prerequisite: at least sophomore standing.

320-3 Physiological Basis of Human Movement. Immediate and long range effects of muscular activity on the systems. Integrative nature of body functions and environmental influences on human performance efficiency. Laboratory to be arranged. Prerequisite: GSA 209 or equivalent.

325-2 Principles of Physical Education. Designs a structure of knowledge which underlies the practice of physical education with particular reference to a philosophical framework which embraces the moral and ethical values related to the function of personnel in the environment of physical education and competitive sport.

328-1 Intermediate Tennis. Prerequisite: 115m.

330-2 Principles and Procedures of Coaching Women's Sports. An examination of the history, values and trends in extracurricular sports programs for girls and women. A review of regulations and standards as determined by the governing bodies for women's sports and in-depth study of coaching procedures. Prerequisite: junior standing, competitive experience.

348-1 to 2 Camp and Community Leadership. Fundamentals of scouting, camping, and counseling. A weekend camping trip required.

350-2 Teaching Physical Education in the Elementary Schools. For supervisors and teachers of physical education. Curriculum planning, based on grade characteristics and educational philosophy, presentation of skills including skill tests, lead-up games, stunts and tumbling, games of low organization, creative rhythms, singing games, and folk dance. Second level (advanced course 356b). Physical education uniform and tennis shoes required. Open only to physical education majors. Prerequisite: 210.

352-1 History of Physical Education. The background and development of physical education.

355-1 to 2 Methods of Teaching Swimming. Methods of teaching swimming and lifesaving. (First level.) Bathing cap required. Prerequisite: 115l, 210.

356-6 (2, 2, 2) Advanced Methods of Teaching Physical Education. (a) Special Students (Second level). Physical education uniform and tennis shoes required. Prerequisite: 351. (b) Elementary Schools (Second level). Physical education uniform and tennis shoes required. Prerequisite: 319 or 350. (c) Swimming (Second level). Bathing cap required. Prerequisite: 355.

357-3 Organization and Administration of Physical Education. Consideration of the specific problems related to organization of the curriculum, facilities and equipment, personnel management, budget making, legal liability, and public relations. Prerequisite: 325.

360-.5 to 2 (.5 per activity) Theory of Officiating. An official's rating can be obtained in the following sports: (a) Badminton, (b) Basketball, (c) Field Hockey, (d) Gymnastics, (e) Softball, (f) Swimming (competitive), (g) Swimming (synchronized), (h) Track and Field, and (i) Volleyball. One-half hour may be earned for each activity up to the maximum of 2 hours. Students may enroll in an unlimited number of activities, but may receive credit for only four activities. Prerequisite: the corresponding activity course.

362-1 to 2 Teaching Physical Education Activities. Teaching badminton, softball, basic movement and recreational games. Elective Pass/Fail.

369-2 Improving Teaching Through Testing (Workshop). Teaching aids, diagnostic measures, practices, and standardized tests for a variety of physical skills. Principles of programmed learning applied to psychomotor tasks.

370-3 Tests and Measurements in Physical Education. The theory of measurement in physical education, the selection and administration of appropriate tests of motor skills and the interpretation of results. Projects required. Prerequisite: at least junior standing.

374-1 Advanced Folk Dance. (Same as Physical Education — Men, Theater 374.) Prerequisite: 115f.

376-2 Emergency Care and Prevention of Athletic Injury. The theoretical and practical methods of preventing and treating athletic injuries, techniques of taping and bandaging, emergency first aid, massage, use of physical therapy modalities. Lecture and laboratory sessions. Prerequisite: Physiology 300.

379-2 Advanced Dance Composition. (See Theater 379.) Prerequisite: 209, 313.

400-3 Evaluation in Physical Education. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices (predominately tests of motor skill); structure and use of tests; administering the testing program; and statistical manipulation and interpretation and application of results.

402-2 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports. Planning and coordinating extramural activities commonly associated with physical education.

403-2 The Adaptation of Physical and Recreational Activities for the Special Student. Movement performance as applied to children of special populations. Study of

movement theory and its application to developmental needs and motor-perceptual performance.

404-2 The Teaching of Sports. Principles of learning applied to selected sports; progressions, teaching methods, and related summaries of research.

407-2 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries. The application of scientific principles to the theoretical and practical methods of preventing and treating athletic injuries.

408-2 Physical Fitness: Its Role and Application in Education. An analysis of physical fitness as it relates to the total well-being of people. Specific units on the fitness parameters, hypokinetic disease and physical inactivity, stress, current levels of fitness, training programs, and the beneficial aspects of regular exercise. Major emphasis is placed upon incorporating current thinking on physical fitness into the development of teaching models.

410-3 Behavioral Foundations of Coaching. Behavioral problems of the athlete and the coach and possible solutions to such problems. Application of behavioral principles and theories as a basis for understanding the interaction between coach and student in the athletic environment.

415-1 to 6 (1 per topic) Workshop in Sports. A concentrated experience in the latest theories and techniques of selected sports activities. Emphasis is placed on individual and team drills, instructional materials and improved teaching methods. One semester hour for each workshop. A total of four hours only of such workshop experience may be credited toward the master's degree. Workshop titles are: (a) Baseball, (b) Basketball, (c) Field Hockey, (d) Football, (e) Gymnastics, (f) Soccer, (g) Softball, (h) Swimming, (i) Track and Field, (j) Volleyball.

416-3 Current Theories and Practices in the Teaching of Dance. (Same as Theater 416.) Designed to aid a critical evaluation and analysis of dance as an educational tool, from creative dance for children through dance in the University curriculum. Specific techniques, creative ideas, class organization, and general evaluation will be included. All students will be expected to design and instruct a lesson under supervision of the instructor. Notebook required. Prerequisite: GSE 113d or Physical Education for Women 115h and 240.

418-2 Administration of Aquatics. The study of comprehensive aquatic programs, their implementation and coordination.

420-3 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Requires purchase of laboratory manual. Prerequisite: GSA 209 or equivalent.

444-2 to 6 Contemporary Dance Workshop. Dance technique and theory, composition, improvisation, and production. Advanced study of the problems of choreography and production in their presentation as theater. Public performance is required. Prerequisite: one year of technique and theory or equivalent.

493-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. (a) Dance, (b) Kinesiology, (c) Measurement, (d) Motor Development, (e) Physiology of Exercise, (f) History and Philosophy. Written report required. Prerequisite: consent of adviser and department chairman.

494-2 (1, 1) Practicum in Physical Education. Supervised practical experience at the appropriate level in selected physical education activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning physical education facilities. Prerequisite: consent of adviser.

500-3 Techniques of Research.

501-3 Curriculum in Physical Education.

503-2 Seminar in Physical Education.

505-2 to 6 (2 per topic) Topical Seminar in Physical Education.

506-2 Topical Seminar in the Assessment of Motor Performance.

508-2 Administration of Athletics.

510-2 Motor Development.

511-2 Analysis of Human Physical Movement.

512-2 Biomechanics of Human Motion.

513-3 Perceptual Motor Learning of Physical Skills.

515-3 Body Composition and Human Physical Performance.

517-2 Athletic and Physical Education Facilities Design, Construction, and Maintenance.

520-3 Metabolic Analysis of Human Activity.

590-1 to 4 Readings in Physical Education.

592-3 Research Projects in Physical Education.

599-3 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Physical Therapist Assistant (Program, Major, Courses)

This Physical Therapist Assistant program, which has been approved by the American Physical Therapy Association, is designed to prepare the student to work under the direction of a licensed physical therapist to treat disabilities resulting from birth defects, disease, or injury. Following the prescriptions of a physician, the therapist helps the patient to develop strength, mobility, and coordination, and provides relief from pain.

The student will learn massage, exercise ultra sound, hydrotherapy, and other therapeutic techniques in actual practice in the University's Clinical Center. He will work with professional therapists in learning such complex procedures as administering manual muscle tests, electrical muscle and nerve tests, and other evaluative measures.

Before graduation the student will serve a three-month intership in two separate hospitals away from the university campus.

The program is served by an advisory committee which provides supportive expertise. Current members are: David Collins, chief physical therapist, St. Mary's Hospital, Decatur; Virginia Daniel, chairman, department of physical therapy, School of Related Health Sciences, Chicago Medical College; Dr. Harold Kaplan, department of physiology, Southern Illinois University at Carbondale; Dr. Bruce Safman, medical director, department of physical medicine, Mercy Hospital, Urbana; Ruffin Walden III, chief physical therapist, Memorial Hospital, Springfield; and Mrs. Karen Hubble, physical therapist assistant, Carbondale.

The student should expect to spend approximately \$60.00 for uniforms and insurance.

Increasing numbers of elderly and chronically ill persons and the rapid expansion of health care programs in both urban and rural areas have created an urgent demand for trained physical therapists. Employment opportunities are available in hospitals, rehabilitation centers, and extended care facilities.

Since physical therapy provides a unique service and requires a close interpersonal relationship with the patient, the candidate should possess the following qualities: desire to work with people, good mental and physical health, stamina, good coordination and manual dexterity, and spirit of cooperation.

The prospective student should plan to make early application for admission to this program because enrollment is limited by size of faculty and physical facilities.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Physical Therapist Assistant

GSA 101, 106, 107, 208, 209	11
GSB 202	3
GSD 101, 107, 152	9
Health Education 334	3
Physiology 300	3
Physical Education for Men 303	2
Psychology 301, or 303, or 304, or 305	3
Zoology 118	3

Physical Therapist Assistant 100, 113, 202, 203, 205, 207,	
209, 213, 214, 321, 322	28
Electives	6
<hr/>	
Total	71

Courses

100-2 Physical Therapy Orientation. The student will be able to describe the historical background, professional ethics, and legal aspects of physical therapy practice. He will be able to understand and utilize specialized medical terminology. He will be able to prepare treatment areas and patients for treatment. He will be able to understand the relationship of physical therapy to total health care. Lecture one hour. Laboratory two hours.

113-1.5 Therapeutic Modalities I. The student will be able to demonstrate procedures used in the safe application of local heat and cold such as hot and cold packs, infra-red, and paraffin bath. He will also be able to demonstrate safe hydrotherapy procedures such as whirlpool and contrast baths. Lecture one hour. Laboratory two hours. Eight weeks.

202-2 Physical Rehabilitative Techniques. The student will be able to demonstrate rehabilitative procedures such as bed positioning, range of motion exercises, transfer activities and gait training. He will understand the concepts of total rehabilitation. Lecture one hour. Laboratory two hours.

203-1 Pathology. The student will be able to understand the fundamental basis of disease. Emphasis will be placed on those conditions treated through physical therapy procedures. The student will be able to describe the process of inflammation and repair bone and soft tissue injuries. Lecture one hour. Prerequisite: GSA 209.

205-2 Physical Therapy Science. The student will be able to describe selected medical and surgical conditions from the standpoint of etiology, clinical signs and symptoms, and physical therapy treatment. Lecture two hours. Prerequisite: 100, GSA 209, Physiology 300.

207-1.5 Massage. The student will be able to demonstrate massage techniques for specific conditions through role playing and supervised application of massage to selected patients. He will understand the scientific principles of massage and be aware of indications and contraindications for massage. Lecture one hour. Laboratory three hours. Eight weeks. Prerequisite: 100, 202.

209-3 Therapeutic Exercise. The student will be able to administer therapeutic exercise techniques for specific clinical conditions through demonstrations and supervised application of exercise to selected patients. He will understand the scientific principles of therapeutic exercise and acquire the skills to effectively and safely utilize exercise equipment. Lecture two hours. Laboratory two hours. Prerequisite: Physiology 300.

213-2 Therapeutic Modalities II. The student will be able to demonstrate procedures used in the safe application of local heat and cold such as diathermy, ultra violet, and ice massage and understand their physiologic effects. The student will be able to describe the indication and contraindications for the use of heat and cold. Lecture one hour. Laboratory two hours. Prerequisite: GSA 101.

214-3 Physical Therapy Science Practicum. The student will be able to carry out routine physical therapy procedures with selected patients. He will be able to assist in maintaining records and develop cooperative spirit with other members of the department. He will be able to relate to the patient in a professional manner and recognize limits of his professional competence. Lecture one hour. Laboratory four hours. Prerequisite: 207, 209, 213.

321-8 Clinical Internship. The student will be able to apply previously learned theories and techniques of patient care through closely supervised practicum experience in two large general hospitals. Prerequisite: Completion of all other requirements of physical therapy curriculum with a minimum grade average of 2.0.

322-2 Clinical Seminar. The student will be able to discuss with the coordinator of the program patient care and problems encountered during internship. He will have the opportunity to evaluate his educational experience at Southern Illinois University at Carbondale and his clinical internship experience. Prerequisite: concurrent enrollment in 321. Mandatory Pass/Fail.

Physics and Astronomy (Department, Major [Physics], Courses)

The undergraduate major in physics leading to the Bachelor of Science degree provides for a mastery of basic principles and methods of classical and modern

physics and for flexibility in application through a breadth of covering in the field. Students considering a major in physics are urged to consult with the undergraduate adviser of the physics department.

Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	11
English Composition	(3)
Speech	(2)
Writing Course	(2)
Foreign Languages (French, German, or Russian recommended)	(4) + 4
Biological Science (Not General Studies)	6 ³
Mathematics 111	(4) + 1
 <i>Requirements for Major in Physics</i>	65-66
Chemistry 115 ² and 222a, or 222a,b, or 224, 225	7-8
Mathematics 150, 250, 251 or 351, 305, 306	17
Physics	41
Physics 204a, b and 254a, b or 205a, b and 255a, b	8
33 hours from: 205c, 301, 310, 320, 340, 350 or 351, 410, 420, 430, 431, 445, 450 or 470, and one of 424, 425, 428, or 432	
 <i>Total</i>	121-122

Bachelor of Science Degree, College of Education

For this degree the requirements differ from those for the Bachelor of Arts degree in the following respects: No foreign language is required, but 4 hours of General Studies foreign language may be counted toward the GSC requirement in the College of Education. Twenty-two hours of 300 or above physics courses, including 310, 320, 430, 431, and 432 and 4 hours of laboratory courses selected from 350, 351 and 450 are required for the major in physics. To obtain the degree of Bachelor of Science in the College of Education students must satisfy requirements of that college. See Teacher Education Program, page 68.

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

²For students who do not pass a proficiency examination in chemistry.

³If courses are selected which are approved General Studies substitutes the hours earned will reduce the 45 hour requirement in General Studies.

Minor

A minor in physics requires 16 hours and must include Physics 203a,b and 253a,b, or 204a,b and 254a,b, or 205a,b and 255a,b and two of the following: 205c; and 328 and 351 or 324 and 350 (no calculus prerequisite). Students having completed calculus may select 340 and those taking differential equations may select from 310 and 320 and 420 to meet requirements.

Recommended electives

Chemistry 226, 340, and 460 or 462

Engineering 222, 313, 361 or courses formerly numbered 418, 420

GSB 211, 311

Geology 416, 435, 436

Mathematics 221, 406, 421, 452, 455, 475, 480, 481, 483

Courses

203-6 (3, 3) College Physics. Designed to meet preprofessional requirements and the needs of all students in the sciences, except physics and engineering. (a) Mechanics, heat, and sound; (b) Electricity, magnetism, light, and quantum physics. Three lectures, one quiz session. Prerequisite: Mathematics 110b or 111. Elective Pass/Fail.

204-6 (3, 3) College Physics — Honors. Designed for all students of the sciences, but restricted to freshmen who have satisfactorily completed, or have advanced standing in, the mathematics prerequisite. (a) Mechanics, heat, and sound; (b) Electricity, magnetism, light, and quantum physics. Three lectures, one quiz section. Prerequisite: Mathematics 110a or 111 or advanced standing. Elective Pass/Fail.

205-9 (3, 3, 3) University Physics. (a) Introduction to mechanics of rigid bodies and fluids; wave motion, heat, kinetic theory, and thermodynamics. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Continuation of 205a. Electricity and magnetism, geometrical optics, diffraction, interference, quantum physics. Three lectures, one quiz session. Prerequisite: 205a. (c) Introduction to concepts in modern atomic, molecular, and nuclear physics: particles and waves, relativity and quanta. Two lectures, one quiz session, and one three-hour laboratory per week. Prerequisite: 203 or 204 or 205a,b. Elective Pass/Fail.

206T-1 College Physics. Same as the first half of 206b, with topical order of heat, sound, and light.

207T-3 College Physics Laboratory. Same as the first half of 207b, with topical order of heat, sound, and light.

211T-1 University Physics. Same as first half of 211b, with topical order of heat, sound, and light.

212T-3 University Physics Laboratory. Same as first half of 212b, with topical order of heat, sound, and light.

253-2 (1, 1) College Physics Laboratory. One three-hour laboratory period per week, taken concurrently with 203. Elective Pass/Fail.

254-2 (1, 1) College Physics Honors Laboratory. Laboratory courses that accompany 204a,b respectively. Prerequisite: concurrent enrollment in 204. Elective Pass/Fail.

255-2 (1, 1) University Physics Laboratory. Laboratory courses that accompany 205a,b respectively. Prerequisite: concurrent enrollment in 205.

301-2 Theoretical Methods in Physics. Introduction to theoretical methods of general usefulness in intermediate and advanced undergraduate physics, with particular emphasis on applications of these methods to selected topics. Required of all physics majors prior to taking 310 or 320. Prerequisite: 203a or 204a or 205a, Mathematics 250 or consent of instructor. Elective Pass/Fail.

302-3 Astronomy — Honors. Current knowledge of the universe and the gathering of that knowledge. Includes properties of the solar system and theories of its origin, the structure and evolution of stars. Supplemented by occasional hours of evening observation. Prerequisite: one of 203a, 204a, 205a, plus Mathematics 111, or consent of instructor. Elective Pass/Fail.

310-3 Mechanics I. Motions of systems of particles and rigid bodies: gravitation, moving coordinate systems. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.

320-3 Electricity and Magnetism I. The theory of electric and magnetic fields; electrostatic fields in vacuum and in material media, special methods for the solution of electrostatics problems, energy, and force relations in electrostatic fields; stationary electric fields in conducting media, electric currents, magnetic fields, magnetic properties of matter. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.

324-2 Electric Circuits. An introduction to electrical circuits and electronics for science students. Basic terminal characteristics and application of semiconductor and vacuum devices as circuit elements in power supplies, amplifiers, and oscillators. Prerequisite: 203 or 204 or 205, Mathematics 111. Elective Pass/Fail.

328-2 Light. Light propagation, reflection, refraction, interference, diffraction, polarization, and optical instruments. Prerequisite: 203 or 204 or 205. Elective Pass/Fail.

340-2 Thermodynamics. Macroscopic thermal properties of matter and the laws of thermodynamics. Prerequisite: 203 or 204 or 205 and Mathematics 250. Elective Pass/Fail.

350-2 Electric Circuits Laboratory. A laboratory course in practical and precision measurements on electrical and electronic circuit elements, passive and active, including semiconductor devices, electron tubes, and the basic circuits employing them in power supplies, amplifiers, and oscillators. Prerequisite: 324 or concurrent enrollment. Elective Pass/Fail.

351-1 Optics Laboratory. Advanced experiments in geometrical and physical optics. One three-hour laboratory per week. Prerequisite: 328 or concurrent enrollment. Elective Pass/Fail.

401T-1 Mechanics. Same as first half of Physics 401.

- 410-3 Mechanics II.** Lagrange's equations, mechanics of continuous media, inertia and stress tensors, rotation of rigid bodies, small vibrations, and advanced principles. Prerequisite: 310 or consent of instructor. Elective Pass/Fail.
- 415T-2 Modern Physics.** Same as 415B and second half of 430, offered during the second half of the fall semester (415A-3 quarter hours plus 415B-two semester hours equals 430-four semester hours.)
- 420-3 Electricity and Magnetism II.** Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: 320 or consent of instructor. Elective Pass/Fail.
- 424-2 Electronics.** An introduction to electronic circuit design and applications for advanced undergraduate students of science. Basic vacuum tube and transistor circuits employing amplification, feedback, and rectification are studied, principally for small signals including noise and linear operation. Applications to power supplies, amplifiers, oscillators, and detectors used in research are emphasized. Prerequisite: 324, consent. Elective Pass/Fail.
- 425-2 Physics of Modern Electronic Devices.** Physical principles of the semiconducting, ultrasonic, and electro-optic elements used in modern electronics. Prerequisite: 324 or consent of instructor. Elective Pass/Fail.
- 428-2 Modern Optics.** Advanced course in modern optics covering such topics as interference and interferometers, coherence, diffraction, holography, optics of solids, lasers, and non-linear optics. Prerequisite: 328 and 420. Elective Pass/Fail.
- 430-4 Modern Physics.** Lectures on the experimental basis of modern physics. Introduction to quantum mechanics with emphasis on applications in atomic physics. Prerequisite: 310, 320. Elective Pass/Fail.
- 431-2 Molecular Physics.** Molecular spectra and structure. Prerequisite: 430. Elective Pass/Fail.
- 432-2 Nuclear Physics.** Basic nuclear properties and structure; radioactivity, nuclear excitation, reactions; nuclear forces and the two-nucleon problem; production and study of high energy particles and radiations. Prerequisite: 430. Elective Pass/Fail.
- 445-3 Statistical Mechanics.** An introductory course in the principles and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: 340 and 430 or concurrent enrollment. Elective Pass/Fail.
- 450-1 Modern Physics Laboratory.** Introduces the student to experimental research and encourages him to develop and carry out his own experiments. Prerequisite: 300, either of 350 or 351, or consent of instructor. Elective Pass/Fail.
- 470-1 to 3 Special Projects.** Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320. Elective Pass/Fail.
- 480-3 Topics in Classical Physics.** Assists experienced teachers to improve their understanding of classical physics and the strategy of presenting it. Emphasis on demonstration of phenomena as basic strategy in the introduction to new material. Attention given to the design of demonstration apparatus. Related laboratory experience is an integral part of the course. Prerequisite: consent of department. Elective Pass/Fail.
- 481-3 Topics in Modern Physics.** Assists experienced teachers to extend their understanding of modern physics. Lectures and demonstrations aim at improvement of the means of presenting the ideas of modern physics. Related laboratory experience is an integral part of this course. Prerequisite: consent of department. Elective Pass/Fail.
- 482-2 (1, 1) In-Service Institute for Teachers of Physics.** A series of lectures, demonstrations, discussions, and films to assist teachers of high school physics in meeting their classroom problems and responsibilities. Prerequisite: consent of department. Elective Pass/Fail.
- 500-6 (3, 3) Mathematical Methods in Physics.**
- 510-4 Classical Mechanics.**
- 511-3 Mechanics of Deformable Bodies and Fluids.**
- 520-7 (4, 3) Electromagnetic Theory.**
- 530-6 (3, 3) Quantum Mechanics.**
- 531-6 (3, 3) Advanced Quantum Mechanics.**
- 535-6 (3, 3) Atomic and Molecular Physics.**
- 545-6 (3, 3) Statistical Mechanics.**
- 560-6 (3, 3) Nuclear Physics.**
- 565-6 (3, 3) Solid State Physics.**
- 570-1 to 4 Special Projects in Physics.**
- 571-6 (3, 3) X-Ray Diffraction and the Solid State.**
- 575-2 to 4 Selected Topics in Physics.**
- 581-1 to 3 Graduate Seminar.**
- 599-1 to 6 Thesis.**

Physiology (Department, Major, Courses)

Bachelor of Arts Degree, College of Science

General Studies Requirements	45
College of Science Requirements	5
English Composition	(3)
Speech	(2)
Writing Course	(2)
Foreign Languages	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Requirements for Major in Physiology	50
Biology 308 and 1 other biology core course	6
Physical Sciences	20
Physics-8 hours	
Chemistry-8 hours	
Organic Chemistry or other-4 hours	
Physiology Courses	24
Physiology 410-10 hours	
Physiology electives-14 hours	
Electives	20
Total	120

Minor

A minor in physiology requires a minimum of 16 hours of courses in physiology or closely related sciences.

Junior-Senior Honors Program

Juniors who have shown outstanding ability in biology courses and related subjects in their freshman and sophomore years may apply for acceptance into the honors program. Honors students do independent study in the physiological sciences (Physiology 491) during their junior and senior years.

Courses

- 210-4 Introductory Human Physiology. Beginning course in human physiology designed for majors in physiology and other biological sciences, and recommended to premedical and other students considering health professions. Three lectures per week and one two-hour laboratory. Prerequisite: one year of biological science and a reasonable knowledge of chemistry.
- 258-2 to 8 Work Experience Credit. Under special circumstances, practical experience in laboratories or other work directly related to physiology can be used as a basis for granting credit in physiology. Credit for past work experience is sought by petition to the chairman of the department and requires approval of the dean of the College of Science. Credit for on-going work experiences requires approval by the chairman of the department prior to enrollment.
- 259-2 to 8 Occupational Education Credit. Under special circumstances, advanced training in a paramedical or other field directly related to physiology can be used as a basis for granting credit in physiology. Such credit is sought by petition to the chairman of the department and requires approval of the dean of the College of Science.
- 300-3 Human Anatomy. Lectures, demonstrations, and observations of the prosected body. Course primarily for students of physical education, with emphasis of musculo-skeletal and nervous systems. Three lecture hours per week.
- 301-4 Survey of Human Anatomy. Lectures, demonstrations, and observations of the

- prosected body, plus experiences in the anatomy laboratory. Course is designed for students in nursing, mortuary science, biological science, and related disciplines. Three lecture hours and one two-hour laboratory per week.
- 401-10 (5, 5) Advanced Human Anatomy.** Dissection of the human body. Primarily for students with a major in physiology or other biological sciences. Two hours lecture, six hours laboratory per week. Prerequisite: due to limited facilities, permission of the instructor is required.
- 402-5 Concepts of Anatomy.** A detailed survey of human anatomy for preprofessional students with an interest in the biomedical disciplines, including radiographic, cross-sectional, and histological correlates. Five lectures per week. Prerequisite: advanced standing or consent of instructor.
- 410-10 (5, 5) Mammalian Physiology.** Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle. Primary course for all students majoring in physiology or related sciences. Three lectures and two two-hour laboratory sessions per week. May be taken in any sequence. Prerequisite: college level chemistry and physics and at least junior standing.
- 411-4 (2, 2) Experimental Animal Surgery.** (a) Covers animal care and preparation, anesthesia, etc; one lecture and one two-hour laboratory per week. (b) Provides training and practice in surgical procedures. Two two-hour laboratories per week. Must be taken in a,b sequence.
- 414-3 Anatomy and Physiology of Speech and Hearing Mechanisms.** (Same as Speech Pathology and Audiology 314.) Structure and function of the vocal apparatus and hearing. Primarily for students in speech pathology and audiology. Two hours lecture and one two-hour laboratory per week. Prerequisite: consent of instructor required for graduate students.
- 420-3 Principles of Pharmacology.** Action of drugs and other chemical substances on the living organism; pharmacodynamics, chemotherapy, toxicology, and therapeutics. Two lectures and one two-hour laboratory per week. Prerequisite: organic chemistry and basic courses in biology, or consent of instructor.
- 421-3 Principles of Pharmacology.** Pharmacologic action of analgesics, emetics and antimitotics; pharmacology of the nervous system; pharmacology of the muscles; antihistaminics; drugs that affect the eye; drugs that combat infectious diseases. Prerequisite: organic chemistry and basic courses in biological sciences or consent of instructor.
- 430-4 (2, 2) Cellular Physiology.** The nature and mechanisms of function of the living cell. Chemical and physical analysis of function at the cellular level. Four lectures per week. Prerequisite: organic chemistry.
- 433-4 Comparative Physiology.** Variations of physiological processes in animal phyla, and comparison of these with human physiology. Three lectures and one discussion period per week. Prerequisite: one year of biological science.
- 440-4 Biophysics.** Applications of classical and modern physics in physiological studies, with emphasis on quantitative physical studies of physiological functions, effects of physical environmental factors, and use of physical techniques for physiological studies. Four lectures per week. Prerequisite: one year of college physics, one year of college biology.
- 460-2 Electron Microscopy.** Lectures, demonstrations, and experience on specimen preparation and use of the electron microscope. One lecture and one two-hour laboratory per week. Due to limited facilities, permission of the instructor is required. Prerequisite: permission of instructor.
- 461-3 Biomedical Electronics.** Practical experience with modern electronic circuits and devices used for biomedical purposes, with circuit construction and troubleshooting practice. Two lectures and one two-hour laboratory per week. Prerequisite: consent of instructor.
- 491-3 to 8 Independent Research for Honors.** Supervised readings and/or laboratory research in physiology. Undergraduate honors students only. By special arrangement with the instructor with whom the student wishes to work.
- 492-1 to 3 Special Problems in Physiology.** By special arrangement with the instructor with whom the student wishes to work. Open to undergraduates only.
- 500-1 Advanced Seminar in Physiology.**
- 520-3 Advanced Endocrinology.**
- 530-3 Advanced Cellular Physiology.**
- 531-2 Advanced Cellular Physiology Laboratory.**
- 533-4 Advanced Comparative Physiology.**
- 540-3 Advanced Biophysics.**
- 560-2 Physiological Techniques.**
- 570-3 to 48 Advanced Physiological Topics.**
- 590-1 to 4 Readings or Research in Current Physiological Topics.**
- 599-1 to 6 Thesis Research.**
- 600-1 to 32 Dissertation Research.**

Plant and Soil Science (Department, Major, Courses)

The department of Plant and Soil Science includes crop production, horticulture, and soils. There are many widely varied opportunities for students with an interest in plants or soils. A student may choose a general option within the department and select most of his upper division credits from a wide choice of electives throughout the School of Agriculture and the University. If interests are more specialized, students may elect the science option and specialize in one particular area, or may elect a specialization which will combine a broad background in plants and soils with selected business courses and business related electives.

Students selecting the urban horticulture specialization can prepare for interesting careers in landscaping or gardening in parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance, and in other public and private work to make the environment more pleasing and useful.

Opportunities for individual program development within the various options may be realized through work experience, internships, special studies, and seminars. Students in all specializations are urged to make use of them to meet the goals and needs of their respective programs.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, School of Agriculture

	SPECIALIZATIONS		
	GENERAL	SCIENCE	BUSINESS
<i>General Studies Requirements</i>	45	45	45
GSA 101 or physics substitute ¹	-	3	-
GSA 106 or chemistry substitute ²	3	-	3
Chemistry 222a	-	4	-
Botany 200 and 201 substituted for			
GSA 115-3	4	4	4
Agricultural Industries 204			
substituted for GSB 211	3	3	3
GSB 202	-	-	3
GSD 101	3	3	3
GSD 107	4	-	4
GSD 117 or 118 ³	2	2	2
GSD 153	2	2	2
Mathematics 110 or 111	-	5	-
<i>Requirements for Major in Plant and Soil</i>			
<i>Science</i>	45	58	58
Courses in two other departments			
in agriculture	7	7	7
Botany 320	-	4	-
Chemistry 222b	-	4	-
Plant and Soil Science 200, 220,			
240, 381-1	11	11	11
Other Plant and Soil Science			
courses	13	13	13
Other Agriculture electives	14	9	9

¹Physics 203a, 204a, or 205a may be substituted.
²Chemistry 140a may be substituted.
³GSD 118 highly preferred.

Mathematics, physical sciences, or biological sciences	-	10	-
Accounting 210, Administrative Sciences 301, Marketing 304, or Agricultural Industries 360	-	-	9
Business electives and supporting courses	-	-	9
<i>Electives</i>	30	17	17
<i>Total</i>	120	120	120

Bachelor of Science Degree, School of Agriculture

PLANT AND SOIL SCIENCE MAJOR—URBAN HORTICULTURE SPECIALIZATION

<i>General Studies Requirements</i>	45
GSA 106 or chemistry substitute ¹	3
Botany 200 and 201 substituted for GSA 115-3	4
Agricultural Industries 204 substituted for GSB 211	3
GSB 202, 212	7
GSD 101	3
GSD 107	4
GSD 117 or 118 ²	2
GSD 153	2

<i>Requirements for Major in Plant and Soil Science with a specialization in Urban Horticulture</i>	64-66
Administrative Science 301	3
Agricultural Industries 376	2
Biology 307	3
Botany 456 or 457	3-4
Forestry 340	3
Geography 470a	3
Political Science 340	3
Plant and Soil Science 220, 240, 327, 328a,b, 381-1, 420, 422, 423 or 432	25-26
Other Plant and Soil Science courses	5
Agriculture electives	10
Zoology 316a,b	4

<i>Electives</i>	9-11
<i>Total</i>	120

¹Chemistry 140a may be substituted.
²GSD 118 highly preferred.

Minor

A minor in plant and soil science is also available. A total of 16 hours within the department is required. Of the required hours, one course must be selected from 200, 220, or 240. An adviser within the department should be consulted before selecting this field as a minor.

Courses

100-2 Plants for Man. Exploration of the plant-man interdependency. Provides the student with an awareness of the importance of plants to man's health and physical

well-being. A plant and soil science major may not apply this course toward the required departmental hours but may use it as an agriculture elective. Elective Pass/Fail.

140-2 Soils and Man. The importance of soil in Man's everyday life. Soil as a substrate to grow Man's food and fiber needs. Soil as a medium for plants grown for Man's leisure and appreciation. The importance of soil in reducing harmful chemicals and wastes and improving our environment. Not applicable to a major or to a minor in plant and soil science. Elective Pass/Fail.

200-3 Principles of Field Crop Production. Production of important field crops of the world with greatest emphasis on U.S. and midwestern field crops; crop production changes and adjustments, crop distribution over U.S., and crop groups and classifications; special agronomic problems, crop enemies, crop ecology, fertilizer and liming practices, tillage, crop improvement through breeding. Field trip (no cost).

220-3 General Horticulture. General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Field trip. Seniors cannot enroll without consent of department.

225-2 Genetics for the Amateur Gardener. An introduction to the essential principles of genetics and plant hybridization utilizing common garden and house plants.

228-2 Floral Arrangements. Theory and practice in the art of flower and plant arrangement for the home, show, and special occasions. History, elements, and principles of design and use of color.

238-2 Home Gardening. Vegetable gardening techniques for the home gardener. Both inorganic and organic methods are used together with the latest recommended varieties for the small garden.

240-4 Soil Science. (Same as Forestry 240.) Basic and applied chemical, physical and biological concepts in soils. The origin, classification and distribution of soils and their relationship to man and plant growth. Prerequisite: a course in chemistry; geology suggested.

258-1 to 30 Work Experience. Credit for past work experience in the areas of plant and soil science, or credit through a cooperative program developed between the department and the Office of Student Work and Financial Assistance (limited to a maximum of ten semester hours of credit). Prerequisite: consent of department. Mandatory Pass/Fail.

300-5 (2, 2, 1) Field Crop Production. Principles of growth and production of field crops (a) primarily corn and soybeans, (b) small grains primarily wheat and grain sorghum, (c) laboratory demonstrating principles discussed in both a and b. Prerequisite: an introductory biology course and c must be taken after or concurrently with either a or b. Elective Pass/Fail.

305-4 Plant Genetics. Principles of genetics and evolution of plants, elementary plant breeding, and the interaction between plant breeding and industry. Prerequisite: a course in biology. Elective Pass/Fail.

310-3 Morphology of Crop Plants. Cellular structure, vegetative and reproductive development, and grass morphology of major crop plants. Utilization of crop plant parts. Prerequisite: one course in introductory biology or equivalent. Elective Pass/Fail.

325-3 Garden Flowers. Culture, identification, and use of flowering bulbs, annuals, biennials, and perennials in the home flower garden. Prerequisite: an introductory course in biology or consent of instructor. Elective Pass/Fail.

327-3 Landscape Plant Materials. Identification, usage, adaptability and maintenance of ornamental landscape plants. Two lectures. One three-hour lab. Prerequisite: introductory course in biology.

328-4 (2, 2) Appreciation of Landscape Design. (a) Introduction to theory and principles of landscape design as applied to the modern home. Property selection and climate control. (b) Laboratory. Practical application in modern methods of property planning including the individual components of the completed landscape plan and selection of plants. Prerequisite: 327 or equivalent, and a course in drafting.

346-2 Soil and Water Conservation. How soil erosion occurs, evaluation of the various factors affecting it, its effects on Man, food production and pollution; and practical means of control. Prerequisite: a course in soils suggested.

347-1 Laboratory Practices in Soil and Water Conservation. (Same as Agricultural Industries 347.) Effects of soil properties and rainfall characteristics on erodibility of soils. Laboratory work in land surveying, relief mapping and a study of structures related to soil and water conservation.

359-2 to 4 Intern Program. Supervised work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing and approval of department. Mandatory Pass/Fail.

380-4 (2, 1, 1) Plant and Soil Evaluations. (a) Grain grading to include crop and weed identification and seed identification and analysis; (b) Comparative evaluation and judging of horticultural crops to include flowers, fruits and vegetables; (c) Soil evaluation to include identification of genetic horizons, their physical characteristics and classification. Field trips. These courses are not required for participation in SIU judging team activities. Elective Pass/Fail.

381-1 to 2 (1, 1) Plant and Soil Science Seminar. Discussion of special topics and/or problems in the various areas of plant and soil science. Prerequisite: junior standing.

390-1 to 4 Special Studies in Plant and Soil Science. Assignments involving research and individual problems. Prerequisite: consent of department chairman.

391-1 to 4 Honors in Plant and Soil Science. Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Prerequisite: junior standing, GPA of 3.0 with a 3.25 in the major, and consent of department chairman.

400-2 Trends in Agronomy. A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty.

405-3 Plant Breeding. Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural, and forest plants. Prerequisite: 305 or equivalent. Elective Pass/Fail.

408-3 World Crop Production Problems. Ecological and physiological factors influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: 200. Elective Pass/Fail.

409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Botany 320 or consent of instructor.

419-3 Forage Crop Management. Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Field trip costs approximately \$5.00. Prerequisite: one course in introductory biology or equivalent.

420-4 Crop Pest Control. Study of field pests of forest, orchard, field, and garden crops; pest control principles and methods; control strategy; and consequences of pest control operations. Prerequisite: introductory biology or crop science course and/or consent of department.

422-3 Turf Management. Principles and methods of establishing and maintaining turf for homes, recreational areas, and public grounds. Study of basic plant and soil materials, fertility, culture, water management, and pest control as related to turf-grasses in variable environments. Prerequisite: a biology course.

423-3 Greenhouse Management. Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Student financed field trip required. Prerequisite: 220 or consent of instructor.

424-3 Floriculture. Production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Student financed field trip required. Prerequisite: 423 or consent of instructor.

430-4 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds cuttings, grafts, and other methods of propagation. Prerequisite: 220.

432-4 Nursery Management. Principles and practices involved in the propagation, production, and marketing of ornamental landscape plant materials. Emphasis on plant production with field trips to various production areas.

434-3 Woody Plant Maintenance. Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting, and diagnosis of woody plant problems. Prerequisite: 327 or Forestry 201 or 202 or consent of instructor.

436-4 Fruit Production. Deciduous tree and small fruit growing, physiology, management practices, marketing. Field trips. Prerequisite: 220 or concurrent enrollment.

437-4 Vegetable Production. Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Prerequisite: 220 or consent of department. Elective Pass/Fail.

441-3 Soil Morphology and Classification. Development, characteristics, and identification of soils; study of profiles; and interpretation and utilization of soil survey information in land use planning. Prerequisite: 240.

442-3 Soil Physics. A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity, and methods of physical analysis. Prerequisite: 240.

443-3 Soil Management. The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root system elaboration. Soil management techniques that are important in optimizing plant growth. Prerequisite: 240. Elective Pass/Fail.

447-3 Fertilizers and Soil Fertility. Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Prerequisite: 240. Elective Pass/Fail.

448-2 Soil Fertility Evaluation. A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Prerequisite: 240.

454-3 Microbial Processes in Soils. A study of the numbers, characteristics, and biochemical activities of soil micro-organisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. The role of soil organic matter in interacting with fertilizers, pesticides, and environmental waste products is included. Prerequisite: 240 or one course in microbiology. Elective Pass/Fail.

460-3 Radioisotopes, Principles and Practices. Lectures on the principles of radioisotope technology as applied to agricultural and biological sciences. Prerequisite: general chemistry and biochemistry or equivalent.

468-3 Weeds — Their Control. Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological, and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips. Prerequisite: an introductory biology course. Elective Pass/Fail.

518-3 Principles of Herbicide Action.

520-3 Growth and Development of Plants.

547-2 Soil-Plant Relationships.

560-3 Field Plot Technique.

581-1 to 4 (1, 1, 1, 1) Seminar.

588-1 to 8 International Graduate Studies.

590-1 to 4 Readings.

592-1 to 3 Special Problems.

593-1 to 4 Individual Research.

599-1 to 6 Thesis.

Political Science (Department, Major, Courses)

The study of political science is concerned with predicting, explaining, and evaluating the political behavior, beliefs, laws, and organizational arrangement of people in a variety of settings. A major in political science provides rigorous social science training. A variety of courses afford a student an opportunity to study, in depth, individual and group behavior, political, administrative, and judicial processes, comparative national and subnational governmental systems, intergovernmental relations and conflict resolution, and normative and empirical political theory. The student who is interested in the public sector will find discussions of such topics as voting behavior, American foreign policy, or the decisions and opinions of Supreme Court justices to be challenging experiences.

A major in political science provides excellent training for the public service, scientific polling and political analysis, management training programs, and teaching, particularly at the secondary level. A political science major also provides an excellent foundation for professional graduate training in law, journalism, public administration or public affairs, as well as for graduate work in political science which is essential for a career in higher education. For the non-vocationally oriented student, political science is an excellent major for anyone with a keen interest in politics and public affairs.

A student planning to major in political science should consult with the academic adviser of the department as soon as possible in order to plan an orderly and coherent program. All members of the department are available for consultation on their academic specialties.

Students majoring in political science must take GSB 212. Political Science 200, 213, GSB 250, and GSB 270 are recommended as prerequisites for many advanced courses in the department. In fulfilling General Studies requirements or in choosing electives, political science majors should select courses from economics, psychology, sociology, anthropology, geography, and history. Mathematical or statistical training is highly recommended because of the trend toward empirical research and analysis in political science. Such training will also enhance vocational opportunities. Depending on special interest, a student should also consider courses in foreign languages or computer programming. Such courses are particularly important for the student who is planning to enter graduate school.

Qualified students are encouraged to inquire about individualized courses of study such as Political Science 390, 392, 395, and 494. The interested student should contact the academic adviser of the department or a member of the faculty with whom he would be interested in working.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	15
<i>Requirements for Major in Political Science</i>	34
GSB 212 or equivalent	
Political Science electives, including GSB 200 and 300 level courses offered by the department, to total 34 hours distributed as follows: A minimum of one course from at least 5 of the following 7 areas: scope and methods, political theory, American politics, public law, public administration, comparative politics, international relations. A minimum of three of the elective courses must be taken at the 400 level.	
<i>Electives</i>	26
<i>Total</i>	120

Bachelor of Science Degree, College of Education

A major in political science for education requires 34 credit hours of work in the department. This work must be distributed among the subfields of the discipline in the same manner as the 34-hour requirement described above for the Bachelor of Arts degree.

Every student enrolled in this program should seek regular advisement in the Department of Political Science to insure that department requirements will be fulfilled.

Students obtaining a Bachelor of Science degree in the College of Education must satisfy all requirements of that college. See Teacher Education Program, page 68. Professional education and other certification requirements may be found in the section of the catalog titled Secondary Education. A student enrolled in the teacher education program is required to have a 2.25 grade point average in political science in order to be recommended for student teaching by the department.

Minor

A minor in political science consists of 16 hours to be approved by the department adviser.¹

¹Students completing a minor in political science for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Courses

The numbers preceding the following course titles have been designed to group courses by subject matter as well as level. A summary explaining the numbering system follows:

	Last Two Digits of Course Number
Introduction and Methods	00-02
Political Theory	03-09
American Politics	10-29
Public Law	30-39
Public Administration	40-49
Comparative Politics	50-69
International Relations	70-89
Miscellaneous	90-99

Courses

200-3 Introduction to the Discipline of Political Science: Scope. Examination of the philosophy, methodology, theories, approaches and relevant generalizations of the study of politics and of the scope and subfields of political science. Not open to seniors without instructor's consent. Elective Pass/Fail.

213-3 State and Local Government. Structure, functions, and decision-making processes of subnational governments in the United States. Prerequisite: GSB 212 (or former Govt 231.) Elective Pass/Fail.

214-3 Illinois Government. The politics, structure, and function of state and local governments in Illinois with stress upon the historical development of the political culture, current issues and events in the light of the historical background, and the interrelationship of politics, structure, and policy. Prerequisite: 213 or sophomore standing. Elective Pass/Fail.

300-3 Introduction to the Discipline of Political Science: Methods. Analysis of major problems studied by political scientists and examination of methods and techniques applied to these problems. Prerequisite: 200 recommended. Elective Pass/Fail.

303-3 Introduction to Political Theory. Normative and testable theories in political science are introduced and interrelated. Guidelines for applying those theories to empirical and ethical problems are discussed. Prerequisite: 200 recommended. Elective Pass/Fail.

316-3 Political Socialization. (Same as Sociology 316.) An inquiry into interdisciplinary empirical theory and research on political learning relevant to (1) who (2) learns what (3) from whom (4) under what circumstances (5) with what effects. Prerequisite: 200 or GSB 212 or instructor's consent. Elective Pass/Fail.

317-3 Public Opinion and Electoral Behavior. The nature and function of public opinion as it is related to electoral behavior. Additional sociological and psychological bases of voting behavior will be studied. Prerequisite: 200 recommended. Elective Pass/Fail.

318-3 Political Campaigns and Elections. (Same as Speech 318.) Analysis of modern political campaigns and the role they play in a democracy. Emphasis will be on recent developments in the planning and execution of campaigns by mass media and communication specialists and the role of the political parties and the public opinion polls in this process. Prerequisite: GSB 212. Elective Pass/Fail.

319-3 Political Parties. Nature, structure, and functions of political parties, with particular attention to the roles and activities of political parties in the United States. Attention also given to voting behavior and elections. Prerequisite: GSB 212. Elective Pass/Fail.

320-3 Interest Groups in Politics. An analysis of interest groups and their techniques of political propaganda. Prerequisite: GSB 212. Elective Pass/Fail.

321-3 The Legislative Process. Review of theory and research on representation, demands, support, decision making, outcomes, and other aspects. Emphasis on United States Congress and state legislatures. Prerequisite: GSB 212. Elective Pass/Fail.

322-3 The American Chief Executive. The origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisite: GSB 212. Elective Pass/Fail.

324-3 Politics and Public Policy. The public policy-making process in the United States evaluated and a wide range of public policy programs analyzed. Prerequisite: GSB 212. Elective Pass/Fail.

325-3 Politics and Environmental Policy. Prompted by the conservation lobbies, United States and state legislatures moved to preserve the biosphere and to create a

healthier human environment. The course will cover the traditional common law remedies to protect the citizen and his property from the hazards of pollution and his new broader constitutional and/or statutory right to a clean, healthy, and pleasant environment. Prerequisite: 340 (formerly Govt 360.) Elective Pass/Fail.

328-3 Field Research in Public Policy. Students study public policy of their choice, individually or in teams, using field research techniques such as interviewing, direct observation, and inspection of public records. The policy studied is then evaluated in light of student-developed concepts of the public interest. Prerequisite: GSB 212. Elective Pass/Fail.

330-3 Introduction to the Legal Process. The legal process in operation, including basic procedural elements, and a sampling of the law of manufacturing liability, contract law, and labor law. Recommended for pre-law. Prerequisite: GSB 212. Elective Pass/Fail.

331-3 Development of the American Constitution. An analysis of the origins and evolution of the Constitution from the Colonial Period to the present. Prerequisite: GSB 212. Elective Pass/Fail.

332-3 Law and Civil Liberties. (Same as Black American Studies 345.) The law protecting the civil liberties and rights of people. Prerequisite: GSB 212 recommended. Elective Pass/Fail.

334-3 Administration of Justice. The organization and work of the American judicial system. Recommended for pre-law students. Prerequisite: GSB 212. Elective Pass/Fail.

340-3 Introduction to Public Administration. An introduction to the study of public bureaucracy. Theoretical, political, and practical issues of organization, staffing, financing, and other matters are surveyed. United States administration and organizational behavior are stressed. Prerequisite: GSB 212. Elective Pass/Fail.

353-3 Comparative Communist Systems. General introduction to the political systems of communist states with special emphasis on Eastern Europe. Attention given to the role of ideology, the character and role of the party, and major decision making structures and processes. Elective Pass/Fail.

366-3 Introduction to Latin American Government and Politics. A general introduction to Latin American government on the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. Elective Pass/Fail.

382-3 The New Politics of Europe. International politics of Europe. Comparative analysis of the foreign policies of the major states. Topics studied include nationalism, unification, and security, western Europe's relations with the developing world, Eastern Europe, the USSR, and the U. S. Elective Pass/Fail.

383-3 International Relations of Communist States. History and analysis of the foreign policies principally of the Soviet Union and China, with some attention to Eastern Europe, North Korea, North Vietnam, and Cuba. Prerequisite: 353 (formerly Govt 393) or GSB 250 (formerly GSB 390) or consent of instructor. Elective Pass/Fail.

390-1 to 4 Readings in Political Science. In-depth, introductory and advanced readings in areas not currently covered in other political science courses. Student must choose a faculty member to direct reading and obtain his consent prior to registration. Name of faculty member must be filed with the undergraduate adviser of the department at registration.

392-1 to 6 Honors Seminar in Political Science. Honors. Significant topics chosen for discussion by students and instructor. Prerequisite: President's Scholar and junior standing, or a 3.0 cumulative GPA, or consent of instructor.

395-2 to 6 Internship in Public Affairs. Supervised field work in the office of a governmental agency, political party, interest group, legal agency or other public affairs-oriented organization. The specific organization and the responsibilities of the intern must have the approval of the department prior to registration for this course. A faculty-supervised paper is required in which the student relates his academic and internship experiences. Student must choose a faculty member to direct internship and obtain his consent prior to registration. Name of faculty member must be filed with undergraduate adviser of the department at registration. Prerequisite: consent of department.

403-4 Philosophy of Politics. (See Philosophy 441.) Elective Pass/Fail.

404-6 (3, 3) History of Political Theory. (a) Ancient and Medieval theory, Plato to Thomas Aquinas; (b) Renaissance and Rationalist theory. Machiavelli to Edmund Burke. Prerequisite: 303 or consent of instructor. Elective Pass/Fail.

405-3 Democratic Theory. Political ideas which shaped American beliefs and United States governmental systems. Liberal political theorists from John Stuart Mill to the present. Prerequisite: GSB 212 or consent of instructor. Elective Pass/Fail.

406-3 Revolutionary and Socialist Theory. Revolutionary political theorists from

Karl Marx to the present. Prerequisite: senior, graduate standing, or consent of instructor. Elective Pass/Fail.

407-3 Nationalistic and Sentimental Theory. Idealistic and nationalistic political theorists from Hegel to the present. Prerequisite: senior or graduate standing or consent of instructor. Elective Pass/Fail.

413-3 Modern Federalism. The structure and function of federal systems of government with emphasis on recent revisions in American federalism and comparison of the American federal structure with federalism in other nations. Elective Pass/Fail.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213 (formerly Government 232). Elective Pass/Fail.

415-3 Urban Politics. An examination of the environment, institutions, processes, and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U. S. Prerequisite: 213 (formerly Government 232). Elective Pass/Fail.

416-3 Senior Seminar in Political Behavior. Seminar for advanced undergraduate students to examine in depth such topics as political participation and influence (mass and elite), political conflict, political socialization and recruitment, political leadership. Graduate students not admitted. Prerequisite: 200 recommended. Elective Pass/Fail.

417-3 Political Psychology. An examination of various psychological theories as they relate to the development and change of political attitudes, leadership behavior, and mass political participation. Prerequisite: 200 recommended. Elective Pass/Fail.

418-3 Political Communications. (See Speech 451.) Elective Pass/Fail.

419-4 Political Sociology. (See Sociology 475.)

426-3 Politics of Social Welfare. The Social Security Act and other legislation of major significance for the welfare and maintenance of the family, the handicapped, children, and other special groups. Their relationship to the legal structure of federal, state, county, township, and municipal welfare facilities and institutions with indications of economic and social consequences. Elective Pass/Fail.

427-3 The Politics of National Defense. A comparative study of the political effects of arms developments and arms control, the use and influence of military force in modern society and the factors leading to national aggression and non-aggression. Elective Pass/Fail.

428-3 Government and Labor. (See Economics 436.) Elective Pass/Fail.

429-3 Race and Politics in the United States. Same as Black American Studies 445.) An analysis of the role of Blacks and Whites in American politics. Topics receiving attention include various forms of political participation, leadership behavior, and analysis of political strategies including the Black Power concept. Prerequisite: GSB 212. Elective Pass/Fail.

433-8 (4, 4) Constitutional Law. (a) This, the initial course in a two-course sequence, will be concerned with the basic structure and power relationships in the American constitutional system and, in addition, will cover the 19th and early 20th century bulwarks of constitutional *laissez faire*, the contract clause and "substantive" due process. In brief, the course will cover judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, constitutional amendments, and restraints on economic powers, the contract clause and "substantive" due process. Prerequisite: GSB 212. Political Science 330 is recommended. Elective Pass/Fail. (b) This is the second course in the constitutional law sequence. The course will be wholly concerned with those provisions of the Constitution which protect individual rights and liberties against governmental encroachment. In brief, the course will cover constitutional provisions and case precedents relating to citizenship, freedom of speech, assembly, and association, freedom of religion, rights of persons accused of crime, protection against racial, ethnic, and other forms of discrimination, legislative apportionment and the electoral process. Prerequisite: GSB 212. Political Science 433a is highly recommended. Elective Pass/Fail.

436-3 Administrative Law. Law as it affects public officials in carrying out the rights, duties, and necessary functions of the public office. Prerequisite: 340 (formerly Govt 360.) Elective Pass/Fail.

437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Elective Pass/Fail.

441-3 Organization Theory. Analysis of various approaches to organizational theory and public administration with emphasis on recent American literature in this field. Prerequisite: 340 (formerly Govt 360.) or consent of instructor. Elective Pass/Fail.

442-3 Public Personnel Administration. An analysis of some of the central problems encountered by the government executive in recruiting, maintaining, and developing

- personnel, such as political neutrality, leadership and motivation, career development, security regulations, and the role of personnel in policy planning and execution. Prerequisite: 340 (formerly Govt 360.) Elective Pass/Fail.
- 443-3 Public Financial Administration.** An examination of the administrative problems connected with local and state revenues and expenditures in the United States. Prerequisite: 213 (formerly Govt 232.) Elective Pass/Fail.
- 444-3 Policy Analysis.** An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development. Elective Pass/Fail.
- 447-9 (3, 2, 2 to 4) Urban Planning.** (See Geography 470a, b, c.) Elective Pass/Fail.
- 452-3 Politics of Developing Areas.** A survey, theoretical and descriptive, of the impact upon politics of the process of development, and the role of the governmental system in the direction and control of development. Prerequisite: GSB 250 (formerly GSB 390.) or consent of instructor. Elective Pass/Fail.
- 454-3 Comparative Urban Politics.** Comparative analysis of urban political systems in the United States and other nations. Attention to the social environment, political structures, political processes, and public policies of selected urban areas. Prerequisite: 213 (formerly Govt 232.) Elective Pass/Fail.
- 455-3 Comparative Public Administration.** Administrative attitudes, behaviors, and institutions are compared on a topical basis in governments of Britain, Europe, the United States, Japan, and selected socialist, developing, and ancient states. Elective Pass/Fail.
- 457-3 Great Britain and the Commonwealth.** The nature of the Commonwealth Association and the politics of Great Britain and the "Old Commonwealth" countries: Australia, Canada, New Zealand. Prerequisite: GSB 250 (formerly GSB 390.) Elective Pass/Fail.
- 458-3 Governments and Politics of Europe.** A comparative study of the political systems of the major countries of Western and Central Europe. Prerequisite: GSB 250 (formerly GSB 390.) or consent of instructor. Elective Pass/Fail.
- 459-3 Government and Politics of Soviet Russia.** Dynamics of Soviet government and economy. Prerequisite: GSB 250 (formerly GSB 390.) or consent of instructor. Elective Pass/Fail.
- 460-3 Governments and Politics of South Asia.** Politics in India, Pakistan, Ceylon, Nepal. Prerequisite: GSB 250 (formerly GSB 390.) Elective Pass/Fail.
- 461-3 Governments and Politics of Southeast Asia.** Politics and governments of Burma, Thailand, Malaysia, North Vietnam, South Vietnam, Cambodia, Laos, Singapore, Indonesia, and the Philippines. Prerequisite: GSB 250 (formerly GSB 390.) Elective Pass/Fail.
- 462-3 Governments and Politics of Vietnam.** Development of nationalist and communist political groupings since the period of French domination. Role of the religious sects and the private armies. Constitutions and the legal and political systems of the two Vietnams. Prerequisite: GSB 250 (formerly GSB 390.) Elective Pass/Fail.
- 463-3 Government and Politics of China.** Internal political, economic, and social development of China. Prerequisite: GSB 250 (formerly GSB 390.) Elective Pass/Fail.
- 464-3 Governments and Politics in the Middle East.** The Arab states of the Middle East and Israel. Socialization and integration patterns, the traditional and revolutionary regimes, and regional cooperation and conflict. Prerequisite: GSB 250 (formerly GSB 390) or consent of instructor. Elective Pass/Fail.
- 465-3 Government and Politics of Sub-Saharan Africa.** (Same as Black American Studies 465.) Government and politics of French, English, and Portuguese-speaking areas of sub-Saharan Africa, with particular reference to the decolonization process and the relations of African states with each other and with non-African countries. Prerequisite: GSB 250 (formerly GSB 390.) Elective Pass/Fail.
- 466-4 Governments and Politics of Latin America.** An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states. Prerequisite: 366 (formerly Govt 392) recommended or consent of instructor. Elective Pass/Fail.
- 467-3 Advanced Comparative Politics.** Analysis of the comparative approach to the study of politics and the principal methods employed in this approach. Methodological and conceptual issues are presented in conjunction with basic political structures and processes. Prerequisite: GSB 250 (formerly GSB 390) or consent of instructor. Elective Pass/Fail.
- 471-3 Theories of International Relations.** Systematic analysis of a variety of approaches which seek to explain the actions of nations. The realist and utopian traditions, ecological factors, decision-making processes, theories of conflict and integration, equilibrium and systems analysis will be covered among others. Prerequisite: GSB 270 (formerly Govt 303) or graduate standing. Elective Pass/Fail.

- 473-3 International Organization.** Development and organization of international government and administrative systems, with emphasis on the United Nations. Prerequisite: GSB 270 (formerly Govt 303.) Elective Pass/Fail.
- 475-6 (3, 3) International Law.** (a) Rules and practices governing the nations in their relations in peace and war. (b) Investigation of special problems in international law. Prerequisite: GSB 270 (formerly Govt 303) or consent of instructor. Elective Pass/Fail.
- 477-3 The Making of American Foreign Policy.** An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: GSB 378 (formerly GSB 345) or consent of instructor. Elective Pass/Fail.
- 480-3 International Politics.** The alignment and conflicts of the major powers in historical and contemporary perspective. Particular emphasis will be placed on the basic interests of the great powers, regional arrangements, spheres of influence, the use of coercion in world politics. Elective Pass/Fail.
- 485-3 International Relations of the Far East.** The political and strategic problems and the interplay of the foreign policies of the major powers in this area. Prerequisite: GSB 270 (formerly Govt 303) or History 380 (formerly Hist 367.) Elective Pass/Fail.
- 487-3 International Relations of the Middle East.** Role of Middle Eastern countries in world affairs, international implications of Middle East conflicts, and strategic involvement of the U.S., Soviet Union, and other countries in the area. Prerequisite: GSB 270 (formerly Govt 303) or consent of instructor. Elective Pass/Fail.
- 488-3 International Relations of the Western Hemisphere.** Emphasis on the international behavior of Latin American nation-states and/or regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisite: 466 (formerly Govt 450) recommended. Elective Pass/Fail.
- 494-1 to 6 Honors Research.** Directed research for senior government honors students. Not for graduate students. Prerequisite: consent of instructor and chairman. Student must have at least a *B* average in political science.
- 501-6 (3, 3) Methods of Empirical Research.**
- 502-3 to 6 (3, 3) Topical Seminar in Research Methods.**
- 505-3 to 6 (3, 3) Topical Seminar in Normative Theory.**
- 508-3 to 6 (3, 3) Topical Seminar in Empirical Theory.**
- 510-3 Proseminar in American Politics.**
- 511-3 to 6 (3, 3) Topical Seminar in American Politics.**
- 514-3 Seminar in American State Politics.**
- 515-3 Seminar in Urban Politics.**
- 516-3 to 6 (3, 3) Seminar in Political Behavior.**
- 518-3 Seminar in Political Parties.**
- 521-3 Seminar in the Legislative Process.**
- 538-3 Seminar in the Judicial Process.**
- 540-2 Advanced Public Administration.**
- 542-3 Planning and Budgeting Systems.**
- 544-3 Advanced Policy Analysis.**
- 547-6 (3, 3) Topical Seminar in Public Administration.**
- 568-3 Seminar in Comparative Analysis.**
- 569-3 to 6 (3, 3) Topical Seminar in Comparative Politics.**
- 573-3 Seminar in International Organization.**
- 575-3 Seminar in International Law.**
- 577-3 to 6 (3, 3) Topical Seminar in Foreign Policy.**
- 580-3 to 6 (3, 3) Topical Seminar in International Relations.**
- 590-1 to 6 Readings.**
- 591-1 to 6 Individual Research.**
- 595-1 to 6 Internship in Public Affairs.**
- 599-1 to 6 Thesis.**
- 600-1 to 36 (1 to 16 per semester) Dissertation.**

President's Scholars (Courses)

Courses

- 111-1 Freshman Honors Colloquium.** Open to freshmen. Prerequisite: consent of the President's Scholar Program.
- 251a-1 to 8 Honors Seminar.** Seminars in the area of the natural sciences intended primarily for freshmen. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area A. Prerequisite: grade point average of 3.0 or higher.
- 251b-1 to 8 Honors Seminar.** Seminars in the area of the social sciences intended

primarily for freshmen. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area B. Prerequisite: grade point average of 3.0 or higher.

251c-1 to 8 Honors Seminar. Seminars in the area of the humanities intended primarily for freshmen. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area C. Prerequisite: grade point average of 3.0 or higher.

251d-1 to 8 Honors Seminar. Seminars in the area of the organization and communication of ideas, intended primarily for freshmen. Credit earned in these seminars may possibly be used to satisfy a part of the requirement for General Studies Area D. Check with the director of the General Studies Division if this is a consideration. Prerequisite: grade point average of 3.0 or higher.

251e-1 to 8 Honors Seminar. Seminars in the area of health and physical education, intended primarily for freshmen. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area E. Prerequisite: grade point average of 3.0 or higher.

299-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of President's Scholar Program and a faculty member of subject-matter department. Intended primarily for freshmen and sophomores. Prerequisite: consent of the President's Scholar Program.

351a-1 to 9 Honors Seminar. Seminars in the area of the natural sciences. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area A. Prerequisite: grade point average of 3.0 or higher.

351b-1 to 9 Honors Seminar. Seminars in the area of the social sciences. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area B. Prerequisite: grade point average of 3.0 or higher.

351c-1 to 9 Honors Seminar. Seminars in the area of the humanities. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area C. Prerequisite: grade point average of 3.0 or higher.

351d-1 to 9 Honors Seminar. Seminars in the area of the organization and communication of ideas. Credit earned for these seminars may possibly be used to satisfy a part of the requirement for General Studies Area D. Check with the director of the General Studies Division if this is a consideration. Prerequisite: grade point average of 3.0 or higher.

351e-1 to 9 Honors Seminar. Seminars in the area of health and physical education. Up to six hours of President's Scholar seminars may be used to satisfy the requirement for General Studies Area E. Prerequisite: grade point average of 3.0 or higher.

399-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of President's Scholar Program and a faculty member of a subject-matter department. Prerequisite: consent of President's Scholar Program.

499-3 to 9 Undergraduate Honors Thesis. Preparation of honors thesis under supervision of a committee consisting of one or more faculty members in appropriate disciplines and a representative of the President's Scholar Program. Prerequisite: consent of department and of President's Scholar Program.

Professional Education Experiences (Department)

Clinical Teaching (Student Teaching)

Supervised clinical teaching is conducted in affiliated schools in the Southern Illinois area, the suburban Chicago area, and the Chicago city schools. An up-to-date listing of specific schools is available from the office of Professional Education Experiences.

Clinical teaching is a period of responsible professional practice under supervision. This period of professional practice might include several sequential phases which represent increasing professional involvement and responsibility in all aspects of the teacher's role. Supervision is provided by a team of individuals representing both the University and the affiliated school. The individual representing the University is the University supervisor. The individual(s) representing the affiliated school is the cooperating teacher. Supervision is the joint and equal responsibility of these individuals.

The College of Education and the teacher education program requires 12 hours of clinical teaching at the associate teacher level for the Bachelor of

Science degree and the related program of teacher certification. Students are expected to enroll for the entire 12 hours during the professional semester.

Prior levels of clinical teaching will occur in conjunction with other courses in the professional education sequence. In conjunction with Education 302, the student will spend a specific period of time each week as an assisting teacher in a classroom in an affiliated school. This assignment will be consistent with his/her teaching major. Students may participate in additional levels of clinical teaching by electing Education 312, 1-8 hours.

PROFESSIONAL SEMESTER

Clinical teaching (student teaching) at the associate teacher level together with the professional education seminar constitutes a full professional commitment on the part of the student and is a full professional semester of experience in the field carrying 15 hours of credit. Additional hours can be taken only on a regular overload basis with special permission from the chairman of the Department of Professional Education Experiences and the assistant dean for student personnel services of the College of Education.

No student may pursue a professional semester assignment other than the one described unless approved by the chairman of the Department of Professional Education Experiences. To request such approval, the student must complete the form, *Petition for Special Clinical Teaching Consideration*. This form may be secured from the office of the chairman of the Department of Professional Education Experiences, Room 135, Wham Education Building.

The associate teacher (student teacher) must follow the same daily schedule as his cooperating teacher. This means that the associate teacher remains in the school for the entire day as well as participating in whatever extracurricular activities might be the responsibility of his cooperating teacher.

During the professional semester, the associate teacher is expected to follow the school calendar of the school district to which he has been assigned. It may therefore be necessary for him to follow a calendar different from the University calendar during this semester. When this is necessary, the chairman of the Department of Professional Education Experiences will inform the student sufficiently far enough in advance in order that the student may make necessary arrangements.

Since the professional semester is designed in terms of the needs of beginning teachers for complete and integrated experiences, and since more than one University supervisor and/or cooperating teacher may be in charge of the work required of the associate teacher, no part of the work may be dropped by the associate teacher with the expectation of continuing the remainder of the work for credit. Furthermore, if one supervisor finds it necessary to drop an associate teacher from a part of the program, the College of Education reserves the right to require such individual to drop all of his professional semester program rather than merely a portion of it.

Students majoring in elementary education will be assigned with a cooperating teacher in one of the elementary grades, one through six, in an affiliated school. Students majoring in early childhood education will be assigned with a cooperating teacher in a kindergarten or a primary grade one through three, in an affiliated school or in selected preschool classrooms.

The student who majors in a secondary school level subject field which has an approved program in the teacher education program will be assigned with a cooperating teacher in a secondary school, grades seven through 12, whose teaching assignment is consistent with the student's teaching major. Information concerning those specific subject matter fields which have an approved program in the teacher education program may be found in the section of this catalog titled *Secondary Education*.

Special education majors will be assigned with a cooperating teacher in the appropriate specialization; mental retardation, behaviorally disordered, or learning disabled. Students majoring in speech pathology and audiology will be assigned to a cooperating teacher who is a speech clinician in an affiliated school. A suggested schedule for course work and clinical teaching experiences in a special education classroom may be obtained from the student's academic adviser.

Students majoring in special education may elect to fulfill certification requirements for both the Standard Elementary Certificate and the Standard Special Certificate for teachers of the exceptional child. If so, clinical teaching will be required at the associate teacher level, in both an elementary classroom and a classroom for the exceptional child. A suggested schedule for course work and clinical teaching experiences in a special education classroom and in a regular elementary classroom may be obtained from the student's academic adviser.

If one wishes to enroll in the professional semester during the fall or spring semesters of the academic year, it is necessary that his application for the professional semester be submitted prior to December 1 of the academic year preceding the semester in which he wishes an assignment. Announcements will appear in the *Daily Egyptian*; major departments, and all academic advisement units will be notified concerning this submission date. Students are scheduled for either fall or spring semesters of the following year on the basis of information provided in this application.

Students should plan on living in the community to which they are assigned during the professional semester. Therefore, students are cautioned not to commit themselves to local housing for the professional semester. A housing contract will not serve as justification for needing an assignment in a local school for the professional semester. If the student is living in University housing, he should notify the Housing Office of the semester he will be off-campus for the professional semester.

The professional semester program during the summer sessions will be restricted to those individuals who are currently employed as classroom teachers and who hold a provisional teaching certificate. A special program for such individuals will be arranged which will combine clinical teaching and other appropriate professional education course work. Application for this program must be made by February 1 immediately preceding the desired participation.

Application blanks for both regular academic year and special summer participation may be obtained from the office of the chairman of Professional Education Experiences.

The student is cautioned that he/she must also register for the professional semester. Registration will include the following courses: Education 350, 400, and 401.

Care must be given to registration in the appropriate sections in order to assure that the University transcript will correctly identify the teaching major in which the intern experience was completed.

PROFESSIONAL SEMESTER (STUDENT TEACHING) PREREQUISITES

1. The student must have achieved formal acceptance into the teacher education program and must present his record of acceptance when applying for the professional semester.
2. The student is responsible for having all transcripts of credit earned at colleges or universities other than Southern Illinois University at Carbondale on file in the office of the chairman of the Department of Professional Education Experiences. These must be on file by the tenth day of the

- semester immediately preceding the professional semester for which the student is applying.
3. Prior to the professional semester, the intern must have completed a minimum of 20 semester hours in the subject he proposes to teach. The course work involved must meet the approval of the department chairman of that major department. (Course work and/or performance required may be obtained from the department concerned.) An up-to-date list of approved majors in the teacher education program may be found in the booklet, *The Teacher Education Program*, or requested from the office of Professional Education Experiences.
 4. The student must have completed 75 semester hours of credit with a minimum cumulative average of 2.25 before beginning work in student teaching.
 5. Each of those courses which are a part of the professional education sequence prior to the professional semester must have been completed with a grade of C or better. (Education 301, 302, 303, and 304.)
 6. The student must have completed GSD 101 and GSD 117, 118, or 119, and one additional English course (GSC, GSD, or English department) with a grade of C or better in each of the last two courses completed. The student eligible by ACT (90th percentile or higher) or CLEP scores (480 or above) to take the proficiency examination in English composition may satisfy this requirement with proficiency credit in GSD 101 and GSD 117 and at least a C in English 290.
 7. Every student teacher must have a health clearance from the University Health Service. The health clearance consists of a tuberculin test. If it is not convenient to come to the health service in Carbondale, the student may have a tuberculin test by his own medical doctor. A record of the health clearance must be on file in the office of Professional Education Experiences by the tenth day of the semester immediately preceding the student's professional semester.
 8. The student must have established at least one semester of residence at Southern Illinois University at Carbondale, earning a minimum of 12 semester hours of credit, prior to any professional semester assignment.

Clinical Experiences other than the Professional Semester

Other opportunities are provided for students in the teacher education program to observe and participate in the teaching-learning process in a clinical setting. This setting might be off-campus in an affiliated school classroom; this setting might also be in the on-campus teaching skills laboratory.

In conjunction with observation and participation in an affiliated school classroom, the student may elect to combine various courses in the professional education sequence and Education 312 with requirements in his major program.

ANALYSIS OR INTERACTION IN SCHOOL OR RELATED EDUCATIONAL SETTINGS

The student observes and participates in an affiliated school classroom under the direction of the public school cooperating teaching and a University supervisor from the Office of Professional Education Experiences. In this capacity the student will have an opportunity to perform many duties related to the teaching-learning process. These might include: preparing instructional materials, "setting-up" instructional equipment, evaluating student work, tutoring an individual student, working with a small group of students under the guidance of the cooperating teacher, etc. For this experience, the student might spend one entire day per week in a designated classroom, a specified number of

mornings or afternoons, a block of one or two hours every day, or some other arrangement that would be deemed beneficial to both the student and a cooperating teacher in an affiliated school.

The student registers for Education 312 for from one to eight hours of credit. The student must also submit an application to the Office of Professional Education Experiences in order that placement can be secured. At the time the application is submitted, the student must make an appointment with the coordinator of pre-student teaching field experiences in order to determine the time commitment and credit involved. This application must occur by the end of the 15th week of the semester preceding the desired experience.

TEACHING SKILLS LABORATORY

In conjunction with the on-campus teaching skills laboratory, the student can engage in various activities which are designed to assist him in acquiring, practicing, and evaluating the specific skills associated with the teaching process. The student can view video-tapes for the purpose of analysis of instructional processes. He can view various "demonstration tapes" which will be designed, along with the related study guides, to assist him in learning about specific teaching skills. Through "micro-teaching" arrangements, the student can practice these skills and arrive, eventually, at an evaluation of how effectively he can employ those skills.

The main objective of such a laboratory is to assist the student in focusing on the various processes that teachers employ in effective instructional procedures.

Admission to the Teacher Education Program

Information concerning admission to the teacher education program is included in Chapter 3 of this catalog under the overall heading College of Education. This information is also available in the booklet, *The Teacher Education Program*. This booklet may be secured from the Office of Professional Education Experiences or the assistant dean for student personnel services of the College of Education.

Psychology (Department, Major, Courses)

The undergraduate major in psychology is primarily aimed at providing broad general education rather than specialized professional training in psychology. To become a professional psychologist usually requires the completion of two to four or more years of postgraduate study.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	15
<i>Requirements for Major in Psychology</i>	28-30
GSB 202	(3)
Mathematics 110a	(3)
Psychology 211	4
Psychology electives: (8 courses) The electives must be distributed so at least three courses are chosen from Group A and three from Group B. At least one course must be chosen from 311, 312, 314, 315, 316. At least two of the selections must be at the 400 level.	

Group A: 301, 303, 304, 305, 307, 316, 320, 322, 323, 330, 333,
421, 431, 432, 440, 451, 459, 461
Group B: 309, 310, 311, 312, 314, 315, 404, 407, 409, 411, 415,
GSA 302
Psychology 391, 394, 399, and 489 may also be used to satisfy
the remaining two non-distributed electives.
Psychology 101, 106a,b, and 289
may not be used to satisfy major requirements 24-26

Electives	30-32
Total	120

Minor

A minor in psychology consists of 15 hours of psychology courses approved by the department adviser.¹

¹Students completing a minor in psychology for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Senior Honors Program

A small number of students are selected each year for the honors program. Selection criteria are promising academic performance (3.0 overall grade point average and 3.25 psychology grade point average minimum), expressed interest, recommendation by departmental adviser, and capacity of program to take new students. Emphasis is on small seminar and individual research work by the student.

Courses

- 101-3 Developing Effective Relationships.** The process of group encounter is used to help the student achieve a better understanding of himself or herself and others. Selected readings in interpersonal encounter supplement the experiential laboratory.
- 106-8 (4, 4) Drug Abuse and the Helping Relationship.** A two-course sequence on drug-related problems and developing potential as a helping agent. (a) Examination of drug information, experience with small groups, communication, and helping skills. (b) Further development of skills; small group and student-designed action projects. Must be taken in a,b sequence. Prerequisite: consent of instructor. Mandatory Pass/Fail.
- 211-4 Research Methods in Psychology.** An introduction to the application of scientific methods to the study of behavior. Experimental design and methodology and correlational procedures are considered. Considerations of data analysis and interpretation are integrated with the treatment of design and methodology. Lecture and laboratory. Prerequisite: GSB 202.
- 289-1 to 12 Undergraduate Seminar: Selected Topics.** Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: consent of instructor.
- 301-3 Child Psychology.** The biological and psychological development of the child from birth through puberty, and relevant research methods and results. Prerequisite: GSB 202. Elective Pass/Fail.
- 303-3 Adolescent Psychology.** Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: GSB 202. Elective Pass/Fail.
- 304-3 Psychology of Maturity and Old Age.** A consideration of psychological factors in later maturity and old age, and their concomitant problems, both individual and societal. Prerequisite: GSB 202. Elective Pass/Fail.
- 305-3 Psychology of Personality.** The inferred patterns underlying an individual's unique reactions to his environment. Investigates the motivation, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: GSB 202. Elective Pass/Fail.
- 307-3 Social Psychology.** Introduction to the area of social psychology. Considers methodology, person perception, interpersonal attraction, attitude formation and change, social influence, group processes, intergroup conflict, and other contemporary issues in social psychology. Prerequisite: GSB 202. Elective Pass/Fail.

309-3 Psychology of Learning. Principles and laws of learning as derived from the classical and instrumental learning literature—acquisition, extinction, punishment, persistence, generalization, discrimination, motivation, drives, and incentives. Prerequisite: 211.

310-3 Cognitive Psychology. A survey of theory and research on attention, memory, language behavior, and problem solving. The principal orientation will be the information processing approach to the study of behavior. Prerequisite: GSB 202.

311-3 Experimental Psychology: Learning. Investigates the processes governing behavioral change covered in 309. Experimental studies of conditioning, memory, and forgetting will be emphasized. Laboratory work will include the design and conduct of experiments with humans and/or animals. Prerequisite: 309.

312-4 Experimental Psychology: Perception. Investigates the variables influencing an organism's stimulation by his environment. The structure and operation of the sense organs as well as complex perceptual phenomena are examined in lectures and laboratory. Prerequisite: 211.

314-3 Experimental Physiological Psychology. A survey through readings and laboratory exercises, of selected topics in physiological psychology. The biological bases of sexual behavior, motivation, and memory are emphasized. Prerequisite: GSA 302, Psychology 211.

315-3 Experimental Psychology: Cognitive Processes. The student conducts three or four experiments in cognitive psychology. The first experiments are described in detail by the instructor; the final experiment is one of the student's own design. Prerequisite: 211, 310.

316-3 Experimental Psychology: Social. A laboratory and lecture course designed to familiarize the student with basic research methodology in experimental social psychology. Prerequisite: 211, 307.

320-3 Industrial Psychology. A study of the use of psychological methods in the analysis of human factors problems in business and industry. Prerequisite: GSB 202. Elective Pass/Fail.

322-3 Personnel Psychology. Covers the use of psychological methods in the analysis of jobs and in the selection, placement, and evaluation of personnel in business and industry. Prerequisite: GSB 202. Elective Pass/Fail.

323-3 Psychology of Employee Relations. Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, and human relations training. Prerequisite: GSB 202. Elective Pass/Fail.

330-4 Psychology Applied to Personal Adjustment. Review of psychological methods potentially useful in self-improvement. Training and practice in learning to use various learning procedures with typical problems in everyday living. Effectiveness assessed and discussed in small groups or confidentially with instructor. Prerequisite: six hours of psychology or consent of instructor.

333-3 Psychology of Women. An examination of empirical evidence on the biological, psychological, and social functioning of women, describing women's roles, the genetic versus social determinants of women's behavior, and the implications for women's potential. Prerequisite: GSB 202 or consent of instructor. Elective Pass/Fail.

391-1 to 12 Individual Study. Independent study under the supervision of a member of the psychology faculty. Prerequisite: consent of instructor. Mandatory Pass/Fail.

394-1 to 9 Undergraduate Practicum in the College Teaching of Psychology. Supervised practicum in the college teaching of psychology for selected senior psychology majors. Prerequisite: senior psychology major and permission of instructor.

399-1 to 9 Research and Investigation: Honors. Intensive study in selected areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Prerequisite: consent of chairman.

404-3 Theories of Perception. An examination of the different theories concerned with an organism's sensory contact with his environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 211 or consent of instructor.

407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: 309 or equivalent.

409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: senior status.

411-3 Principles of Training. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: 309.

415-3 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug

influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: GSA 302, GSB 202.

421-3 Psychological Tests and Measurements. Introduction to test theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude, and personality. Prerequisite: six hours of psychology.

431-3 Psychopathology. Classification, description, etiology, and treatment of the disorders of personality organization and behavioral integration. Observations in a state mental hospital setting. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: 301, and 211 or Guidance and Educational Psychology 422.

440-3 Theories of Personality. A review and evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

451-3 Advanced Child Psychology. An assessment of concepts, methods, and research techniques within selected topic areas of developmental psychology. Prerequisite: 211 and 301, or consent of instructor.

459-3 Theory and Practice in the Preschool. Designed for those interested in the education of the preschool-aged child. Examines a variety of topics and provides lectures, demonstration, and practicum experience in the Child Study Cooperative Nursery. Prerequisite: consent of instructor.

461-3 Advanced Social Psychology. Examines in depth current research in experimental social psychology. Emphasis is placed on topics such as person perception, interpersonal attraction, attitude formation and change, social influence, group processes, intergroup conflicts. Not for psychology graduate students. Prerequisite: 211, 307.

489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: consent of instructor.

509-3 Motivation and Reinforcement in Learning.

510-3 Stimulus Control of Behavior.

511-3 Human Learning and Memory.

512-4 Sensory Processes.

514-4 Physiological Psychology.

515-3 Theory and Research in Cognitive Psychology.

522-11 (4, 4, 3) Experimental Design and Analysis.

523-2 Research Methods in Clinical and Counseling Psychology.

524-3 Multivariate Methods in Psychology.

525-3 Mental Test Theory.

527-3 Theory and Methods of Scaling.

530-6 (3, 3) Systems of Personality and Psychotherapy.

531-3 to 6 Community and Institutional Field Placement.

532-2 Experimental Approaches to Personality.

533-2 Experimental Approaches to Psychopathology.

534-3 Behavior Therapy.

535-3 Psychopathology.

538-3 Theory and Practice of Group Facilitation.

539-3 Experimental Approaches to Psychotherapy.

540-3 Psychological Assessment.

542-3 Principles and Problems in Personality Assessment.

547-3 Appraisal in Counseling.

548-3 Vocational Psychology and Career Development.

551-3 Advanced Developmental Psychology I.

552-3 Advanced Developmental Psychology II.

554-3 Developmental Theories.

555-3 Language and Cognition.

556-2 Psychological Treatment of the Child.

557-2 Family Psychotherapy.

560-3 Social Psychology Proseminar.

576-3 Human Engineering.

585-1 to 18 Advanced Seminar.

590-1 to 12 Readings in Psychology.

593-1 to 24 Research in Psychology.

594-1 to 16 Practicum in Psychology.

595-1 to 12 Internship.

597-1 to 15 Preprofessional Training.

598-3 Ethical and Professional Problems in Psychology.

599-1 to 6 Thesis.

600-1 to 24 Dissertation.

Public Visual Communications (Major [Graduate only], Courses)

Courses

- 500-2 Introduction to Graduate Study in Public Communications.
- 501-2 Seminar: Visual Communications.
- 510-3 Researching and Developing Public Telecommunications Programming.
- 530-3 International Telecommunications.
- 531-3 Seminar: Photographic Communication.
- 532-3 Audience Communications Research.
- 541-6 (3, 3) Seminar: History of Photography.
- 542-6 (3, 3) Seminar in Film History.
- 570-3 Public Telecommunications Program Analysis and Criticism.
- 571-3 Regulation and Control of Public Communications.
- 572-4 (2, 2) Management of the Photographic Unit.
- 573-3 Public Telecommunications Management.
- 574-3 Contemporary Film Theory.
- 580-2 Seminar: Current Trends in Public Telecommunications.
- 589-3 Seminar: Public Communications in a Dynamic Society.
- 591-1 to 3 Individual Study in Public Communications Arts.
- 597-2 to 6 Production Seminar: Cinema, Photography, and Television.
- 599-3 to 6 Thesis.

Radio-Television (Department, Major, Courses)

The Department of Radio-Television prepares students for responsibility as professional broadcasters and as conscientious citizens by combining practical and theoretical courses in broadcasting with the broad background needed to function appropriately in our society. Within an interdisciplinary approach, the Department of Radio-Television studies the public interest while affording work in all aspects of the broadcast media, except the purely technical. The curriculum does not cover broadcast engineering. In addition to classroom instruction, the department is very closely interrelated with the SIU Broadcasting Service, which operates a radio and a television station. As an established part of the department's curriculum, students are required to involve themselves in actual on-air experience on these stations. In addition, an internship potential is included in the formal curriculum, so that students with a *B* average or better may gain academic credit for actual professional work experience at broadcasting associated organizations outside the campus.

The core courses, Radio-Television 300M and 300P, must each be completed with a grade of *C* before students may continue in the major. This requirement does not apply to non-majors. Students must complete 30 semester hours of college credit before registering for either 300M or 300P; students with 45 semester hours may take both courses the entering semester. Southern Illinois University at Carbondale students should attempt to take these courses in the sophomore year; transfers with junior standing should take both courses the entering semester.

Radio-Television majors may not take a pass/fail course in either the major or the minor unless such courses are designated as Mandatory Pass/Fail. Each radio-television major must, by the end of the sophomore year:

1. Either achieve a grade of *B* in both GSD 101 and GSD 117, or 119, or a grade of *C* in English 290.
2. Either demonstrate a proficiency in typing 30 words a minute by passing a test administered by the Radio-Television Department or attain a grade of *B* in Business Education 201.

A maximum of 38 hours in radio-television courses may be counted toward the first 120 hours for graduation. Each student must complete Radio-

Television 384 and 393, in addition to the two core courses, and must have at least 32 hours in radio-television.

Bachelor of Science Degree, College of Communications and Fine Arts

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Radio-Television</i>	32
<i>Minor (in a related area)</i>	15
<i>Electives</i>	28
<hr/>	
<i>Total</i>	120

The department suggests specialized curricula in various areas of broadcasting for those students who may wish to pursue a specific area of interest. These suggested specializations must meet the department's basic requirements for graduation.

Courses

- 300M-4 Radio-Television Writing Performance Production.** Introduction to the functions, theories, materials and techniques of writing, performing and production for radio and television. Students write, perform, and produce in radio and television studio laboratories. Extra fee for books and supplies \$10.00. Note: Radio-Television 300M and 300P are both prerequisites for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department. Prerequisite: sophomore standing.
- 300P-4 Radio-Television Foundations and Programming.** Examination of the history, economics and governmental control of the American system of broadcasting plus a comprehensive examination of broadcast programming and audience analysis. Note: Radio-Television 300M and 300P are both prerequisites for radio-television majors for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department. Prerequisite: sophomore standing.
- 305-2 Basic Communication Research.** Principles and techniques of research in communication. Types of research. Examination of empirical studies. Writing of research. Prerequisite: *C* in 300M and P.
- 308-3 Broadcast Laws and Policies.** Legal aspects of broadcasting, via study of historical and current developments in rules, laws, philosophy of broadcast regulation. Relationship of federal and state law, and the various government regulatory agencies concerned with broadcasting. Case studies and written problems in broadcast law. Prerequisite: *C* in 300M and P.
- 310-3 Radio-Television News Writing.** The basic techniques of writing, re-writing and editing news from local and wire service sources, for presentation of radio and television. Actual experience with the WSIU and WSIU-TV facilities is stressed. Laboratory hours required. Prerequisite: *C* in 300M and P; 308.
- 311-3 Radio-Television News Reporting.** Classroom lectures on the techniques of news reporting and the writing of on the scene stories. Includes actual covering of a news "beat" and the reporting of the stories for air on radio and television. Laboratory hours required. Prerequisite: *C* in 300M and P; 308 and 310.
- 325-3 Survey of Cable Communications.** History and projections of CATV industry growth, patterns of regulation and use. Relation of cable communications to other media, and to society. Extensive readings and discussion of the literature. Prerequisite: *C* in 300M and P.
- 335-3 CATV Programming-Production.** Presents theoretical approaches to programming for cable systems originating programs, as well as practical workshop experience in creating and producing such programming. Laboratory hours required. Prerequisite: *C* in 300M and P; 325.
- 340-3 Production Analysis and Media Criticism.** An examination of existing broadcast techniques to develop the student's sensitivity to and perception of broadcast production as a tool for communication. A section on communications theory ties analysis and criticism together. The course requires several written critical analyses of productions and current criticisms of the media. Prerequisite: *C* in 300M and P.
- 351-3 Programs and Audiences.** The interrelationships of programs and audiences. Methods of audience and program research, and an investigation of the factors that influence programming decisions. Prerequisite: *C* in 300M and P.
- 360-4 Radio-Television Performance.** Announcing techniques and extensive practice in various media situations. The development of disciplines controlling vocal and visual

mechanics and interpretive performances. Radio and television studios and audio and video tape utilized for practice and performance. Laboratory hours required. Prerequisite: *B* in 300M, *C* in 300P; Speech 104.

363-3 Intermediate Radio Production. Techniques of producing, directing, writing and performing radio production announcements and programs, with emphasis on creative use of sound effects and music. Laboratory hours required. Prerequisite: *C* in 300M and *P*.

365-2 to 4 (2, 2) Television Studio Operations. The operational and production aspects of television studio operation. Participation in actual program production for WSIU-TV. Laboratory sessions will be arranged. Prerequisite: *C* in 300M and *P*.

369-2 Basic Television Directing. Instructional and laboratory experience in television program and control room directing. Basic techniques in studio program directing including newscasts, panel interview, music and drama. Laboratory hours required. Prerequisite: *C* in 300M and *P*; 340 and 365.

370-3 Television News Film Production. Technique of filming short news stories and features. Each student will produce short television films using 16mm equipment. Laboratory hours required. Prerequisite: *C* in 300M and *P*.

371-2 Techniques of Staging, Lighting, and Graphics for Television. Television studio set design, the various techniques of studio lighting, and the special demands of the graphic arts in television production. Laboratory hours required. Prerequisite: *C* in 300M and *P*.

377-3 Radio-Television Advertising and Sales. Study and practical experience in designing and developing promotional and advertising campaigns for the radio and television media. Selling techniques, methods and skills. Prerequisite: *C* in 300M and *P*.

383-3 Basic Radio-Television Writing. Experience in writing radio and television formats, and announcements—commercial, public service, and promotional. Develops critical awareness and analytical attitude toward broadcast writing, and stresses imagination and creative writing skills. Frequent written assignments in and out of class. Prerequisite: *C* in 300M and *P*; 340.

384-1 Radio-Television Practicum. Practical experience in broadcast operations. Required of all majors at the end of the student's chosen sequence. Prerequisite: *C* in 300M and *P*, and consent of instructor.

390-4 Operations and Management. Objectives, procedures, equipment, policies and costs in radio and television station development and operation. Program formats for radio and television. Necessary components of program format construction. Prerequisite: *C* in 300M and *P*; 308, 351, and 377.

391-1 to 3 (2, 1 or 1, 1, 1) Independent Study. Area of study to be determined by student in consultation with radio-television instructors. Prerequisite: *C* in 300M and *P*; consent of instructor.

393-3 Radio, Television, and Society. The interrelation of radio and television with social habit patterns and with economic and political systems. Prerequisite: *C* in 300M and *P*; completion of 90 hours.

395-2 to 4 Internship Program. News production, performance or management/sales work experience within a non-university professional organization. The student will be provided an educational experience beyond that available at the University. Prerequisite: junior status, 4.0 average in major, specific courses completed in major, and selection committee consent.

430-2 Public Affairs and the Radio-Television Establishment. An examination of the history and scope of public affairs programming on radio and television. The effects of public affairs on programming and audiences. Prerequisite: *C* grade in 300M and 300P.

453-2 Public Broadcasting. The history and regulatory structure of public broadcasting in the United States today, with special emphasis on organizations regulated under the Public Broadcasting Act of 1967. Methods of funding public stations, programming, and careers in public broadcasting are also considered. Prerequisite: *C* grade in 300M and 300P; 308.

467-3 Radio-Television Production Survey. Production techniques and equipment for all phases of radio and television presentations for those who are not planning professional careers in broadcasting. Standards for equipment and facilities selection. Radio and television laboratory production projects. Prerequisite: non-major.

470-3 Documentary Film Production. For the student with a serious interest in the documentary film. Students work in teams researching, writing, filming, and editing films on subjects relating to historical, cultural, or social issues. Prerequisite: *C* grade in 300M, 300P, and 370 or *C* grade in Cinema and Photography 355 and 356 and consent of instructor. Mandatory Pass/Fail. Graduate students must take on letter grade basis.

481-2 ITV Administration, Production and Utilization. Development of ITV pro-

duction with emphasis on the use of instructional objectives, the relationship of users' manual to the instructional series, and the functions of various personnel in the administration of instructional television. Prerequisite: C grade in 300M and 300P.

483-3 Advanced Radio-Television Writing. Exercises in writing broadcast manuscripts including documentary, drama, and childrens' programming. Prerequisite: C grade in 300M, 300P, and 383; 340.

489-2 to 6 Radio Television Workshop. Advanced study in various areas of radio-television and interrelated disciplines. Offered summer session only. Prerequisite: C grade in 300M, 300P, and consent of instructor.

491-3 to 6 (3, 3) Independent Study. Area of study to be determined by student in consultation with radio-television graduate faculty. Prerequisite: C grade in 300M and 300P and consent of instructor.

Recreation (Department, Major, Courses)

The Department of Recreation prepares the student for positions in the management of Man's leisure time pursuits. The department builds its curriculum on a broad General Studies foundation, offers professional and skills courses within the Department of Recreation, and draws from many related departments of the University for competencies and skills in the preparation of leaders for the recreation profession.

The curriculum emphasizes the practical as well as the theoretical aspects of recreation by offering practicums, supervised field experience, and internships in various recreational settings throughout Illinois and the nation.

Students admitted to the Department of Recreation must meet the College of Education requirements and follow their procedures for acceptance. In order to be admitted to practicum courses, students must have a grade point average of 2.25 and the consent of the instructor. Students who do not meet the College of Education requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation are required to complete 45 hours of General Studies, 29 hours of professional courses, a total of 12 hours of leadership experience in at least two areas of interest, and work closely with the department advisers in selecting electives for their chosen area of specialization.

The Department of Recreation offers courses leading to specialization in (1) park and community recreation, (2) recreation for special populations, (3) outdoor recreation, (4) commercial recreation management, and (5) program specialist.

Students majoring in recreation who wish to teach in the public schools must complete a teaching major and fulfill the requirements of the College of Education.

Students majoring in recreation should start early in their college careers developing skills and competencies in music, dance, arts and crafts, literature, sports and games, nature, drama, and other leisure and cultural areas. The American Red Cross life saving certificate, American Camping Association campcraft certificate, workshop certificates in recreation sponsored by the state and national recreation and park associations, and other certificates in instructional areas are desirable in preparation for positions in recreation management.

As soon as possible the recreation major will decide on one of the four specializations and elect courses for his area of specialization. The undergraduate advisers in the Department of Recreation are available to students to explain job opportunities and to outline required and elective courses in their chosen specialization. Electives must be on the 300 and 400 levels.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Recreation</i>	75
English 290 or Journalism 340	2-3
Health Education 334	3
Psychology 305, 307	6
Recreation 300, 305, 315, 365, 380-4, 470, 490-12	30
One of the five specializations below	33-34
Park and Community	
Selected from: Recreation 310, 350, 395	18
Electives	15-16
Recreation for Special Populations	
Selected from: Recreation 310, 340, 350, 460	18
Electives	15-16
Outdoor Recreation	
Selected from: Recreation 310e, 310g, 301, 320, 350, 368, 390, 395	18
Electives	15-16
Commercial Recreation	
Recreation 375, 390, 395	7
Accounting 210	3
Administrative Sciences 170, 301, 304	9
Marketing 305	3
Electives	11-12
Program Specialist Electives	33-34
 <i>Total</i>	 120

Courses

300-3 Introduction to Leisure and Recreation. Basic philosophical and historical foundations and development of leisure and recreation in light of economic, political, and social change. Theories and basic concepts of recreation, leisure, and play will be stressed along with the development of an individual recreation philosophy.

301-3 Outdoor Education. Acquaints students with the philosophy and techniques of teaching in the out-of-doors. Ways and means of various outdoor learning experiences. Expenses for required field trips not to exceed \$20.00.

305-3 Recreation Programming and Leadership. A study of essential elements and basic principles involved with the organization and administration of various types of recreation programs and services. Emphasis on leadership processes and methodology.

310-16 (2, 2, 2, 2, 2, 2, 2, 2) Recreation Skills. (a) Social Recreation, (b) Dramatics, (c) Leisurecrafts, (d) Music and Dance, (e) Campcraft, (f) Playground Activities, (g) Camp Counseling, and (h) Nature Interpretation.

315-3 Recreation for Special Groups. Problems and characteristics of special groups in society such as teenagers, aged, emotionally disturbed, mentally retarded, physically handicapped, prisoners, and delinquents. Emphasis on leadership processes, methodology, and program materials.

320-3 Nature Interpretation. Acquaints the student with opportunities for the interpretation of natural phenomenon. Avocational as well as vocational aspects of natural resources. Required field trips not to exceed \$20.00.

340-5 (1, 1, 1, 1, 1) Recreation Activities for Special Populations. (a) Mentally Retarded, (b) Mentally Ill and Emotionally Disturbed, (c) Physically Handicapped, (d) Aged, and (e) Prisons.

350-6 (1, 1, 1, 1, 1, 1) Recreation Workshops. Current innovations and critical evaluation of methods, materials, and supervision of programs in one of the following areas: (a) Day Camps, (b) Puppetry, (c) Storytelling, (d) Leisurecrafts, (e) Family, and (f) Teen Centers.

365-3 Park and Recreation Administration. Administrative procedures in park and recreation departments—organization, finance, personnel, facilities, program, public relations, and other areas of administration.

368-2 Camp Management. Principles and procedures of selection and supervision of personnel, program planning, food preparation, health and safety, camp maintenance, evaluation, and other responsibilities of camp administration.

375-2 Commercial Recreation Management. Problems of commercial recreation related to the profit motive and the challenges and possibilities for public service. Opportunities are examined in such areas as civic centers, student unions, spas and resorts, marinas, ice and roller rinks, sports complexes, and other commercial enterprises.

380-1 to 6 Field Work in Recreation. Supervised leadership experience in a public or private agency with emphasis on activities common to (a) park and community, and (b) special populations. A maximum of six hours may be earned in a or b or a combination of the two.

385-1 to 2 Basic Research and Readings in Recreation. Orientation to research language, basic survey techniques, and areas of research in recreation. Selected readings in professional publications for the purpose of becoming acquainted with the types of research current in community, park, special populations, outdoor recreation, and related fields.

390-2 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of modern outdoor recreation programs. Outdoor recreation is examined in terms of supply and need, economic aspects, environmental problems, and future developments.

395-3 Maintenance of Recreation Areas and Facilities. All phases and principles of development, maintenance, and construction of areas and facilities used in a recreation setting. Stress is put on selection and supervision of maintenance personnel. There is a maximum cost of \$5.00 for course materials in lieu of textbook.

401-3 Fundamentals of Environmental Education. (Same as Agriculture 401.)

423-3 Environmental Interpretation. (Same as Agriculture and Forestry 423.)

450-3 Performing Arts in Education and Recreation. Principles, materials, and techniques of producing all types of drama, music, and dance activities for a variety of recreation and education settings and population groups. Prerequisite: consent of instructor.

460-3 Community and Institutional Recreation for Special Populations. Organization and administration of therapeutic recreation programs in hospitals, nursing homes, schools for the retarded, detention centers, prisons, and other institutions. Emphasis on programs for special populations in the community setting.

470-2 School and Community Recreation. The role of the public schools in community recreation. Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and cooperative programs with other agencies. Prerequisite: consent of instructor.

485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Prerequisite: consent of instructor.

490-2 to 12 Internship in Recreation. Supervised practicum experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in (a) park and community, and (b) special population settings. A maximum of 12 hours may be earned in a or b or a combination of the two. For undergraduate credit only. Prerequisite: 16 hours of recreation and consent of instructor.

500-3 Principles of Recreation.

520-3 Park and Recreation Management.

530-3 Programs in Recreation.

540-3 Planning Outdoor Areas for Education and Recreation.

550-3 Research in Recreation.

560-3 to 12 (3 per topic) Seminar in Recreation.

565-3 Seminar in Environmental and Outdoor Education.

570-3 Seminar in Recreation Management.

575-1 to 6 Individual Research.

580-1 to 6 Readings in Leisure and Recreation.

596-1 to 6 Field Work in Recreation.

599-1 to 3 Thesis.

Rehabilitation (Institute, Major [Graduate only], Courses)

Courses

400-2 to 3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved. Note:

Students can enroll in the didactic portion for two credits, or three credits if they elect the field trips. No student can take the field trips alone without taking the didactic portion as well.

402-1 to 3 Human Development and Behavior. Examines theories and systems of human development, personal behavior patterns and learning principles related conceptually to rehabilitation processes and practices.

406-3 Introduction to Behavior Modification. A survey of the principles and procedures in behavior modification and the scope of its application to human needs and problems.

409-3 Scientific Methods in Behavior Analysis. A general review of philosophical issues and methodological approaches to the study of human behavior; includes sampling procedures, group statistical designs and single-subject multi-manipulation and multi-replication tactics. Prerequisite: consent of department.

419-1 to 3 Cross-Cultural Rehabilitation. (Same as Black American Studies 490.) Major focus on the relationship/comparison of basic cultural, economic, and psychosocial processes relative to the rehabilitation of man in contemporary societies. Prerequisite: consent of instructor.

421-3 Vocational Development and Placement. Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement, and follow-up with the handicapped. Prerequisite: 400 or 501.

425-1 to 6 Developing Employment Opportunities. Designed to train rehabilitation personnel in the attitudes, methods, and skills pertinent to placement of handicapped persons in competitive and other occupations. Prerequisite: special standing and consent of instructor.

431-3 Assessment Procedures in Rehabilitation. Review of fundamental bases of measurement, criteria for evaluating tests, practice with representative instruments in major categories, and the use of tests and work samples in assessing the handicapped's functioning abilities and work potential. Requires the purchase of various testing material with a maximum charge of \$10.

445-2 to 12 Rehabilitation Services with Special Populations. (Same as Black American Studies 455.) Procedures and programs pertinent to the care and treatment of special populations. Two semester credits will ordinarily be granted for each unit.

(a)-6 (2, 2, 2) **Aging.**

(b)-6 (2, 2, 2) **Alcohol and Drug Abuse.**

(c)-6 (2, 2, 2) **Economically Deprived.**

(d)-6 (2, 2, 2) **Emotionally Disturbed.**

(e)-6 (2, 2, 2) **Genetically Disabled.**

(f)-6 (2, 2, 2) **Juvenile Offender.**

(g)-6 (2, 2, 2) **Mentally Retarded.**

(h)-6 (2, 2, 2) **Physically Handicapped.**

(i)-6 (2, 2, 2) **Public Offender.**

(j)-6 (2, 2, 2) **Sensory Disabled.**

(k)-6 (2, 2, 2) **Developmentally Impaired.** Prerequisite: consent of instructor.

451-4 General Rehabilitation Counseling. A didactic and experiential analysis of the underlying premises and procedures of individual and group counseling in rehabilitation settings.

479-0 to 2 Technical Writing in Rehabilitation. Fundamentals of writing skills applicable to special areas of concern to rehabilitation specialists, namely: writing journal articles, drafting program/grant proposals, and preparing news releases, and program/evaluation reports.

490-1 to 6 (1 to 2 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Prerequisite: consent of instructor.

501-2 Rehabilitation Foundations.

503-3 Basic Behavior Analysis.

508-3 Complex Behavior Analysis.

513-1 to 3 Medical and Psycho-Social Aspects of Disability.

523-3 Job Restructuring for the Handicapped.

531-3 Individual Assessment Procedures in Rehabilitation.

533-2 Vocational Appraisal.

536-3 to 4 Work Evaluation and Work Adjustment.

543-3 Child Behavior.

545-3 Behavior Modification in Mental Retardation.

553-3 Learning Therapies for Special Populations.

554-3 Behavior Therapy.

555-2 Contingencies of Reinforcement.

562-3 Rehabilitation Workshops and Developmental Centers.

- 564-3 School Related Behavior.
- 568-3 Sex and Biological Control of Behavior.
- 570-3 Rehabilitation Administration.
- 572-1 to 3 Volunteer Administration and Programming.
- 573-2 to 3 Programming, Budgeting, and Community Resources.
- 575-2 Case Management and Reporting.
- 576-2 to 3 Development and Supervision of Rehabilitation Employees.
- 577-2 Behavioral Apparatus.
- 579-3 Advanced Fiscal Management in Rehabilitation.
- 582-1 to 4 Seminar in Rehabilitation Services.
- 583-1 to 4 Seminar in Work Evaluation.
- 584-1 to 4 Seminar in Behavior Modification.
- 585-1 to 4 Seminar in Counseling/Coordination Services.
- 591-1 to 6 Independent Projects in Rehabilitation.
- 593-1 to 6 Research in Rehabilitation.
- 594-1 to 12 Practicum in Rehabilitation.
- 595-1 to 12 Internship in Rehabilitation.
- 599-1 to 6 Thesis.

Religious Studies (Department, Major, Courses)

Religious studies examines religious attitudes and behaviors from their earliest beginnings through their dominant forms, east and west, to their modern developments and alternatives, pointing continually to the question, How is religion possible today? Study of this kind makes an interdisciplinary contribution to a liberal education in the humanities and social sciences and also provides a useful base for graduate study in religion, in the arts, or in any of the helping professions such as the ministry, medicine, psychiatry, law, social work, and public service.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements	15
Requirements for Major in Religious Studies	33
Minimum hours from each of four areas as follows:	
Area A: GSC 216, 217, Religious Studies 310, 311	3
Area B: Religious Studies 330, 331, 332, 333, 334, 335	10
Area C: Religious Studies 320a,b, 360, 361, 441	9
Area D: Religious Studies 301, 302, 340, 341, 352, 353, 496, Sociology 351	11
With special permission, students may earn up to four hours in Areas B, C, and D with courses taken in other departments.	

Electives	27
Total	120

Minor

Students may take a minor in religious studies by completing at least 17 hours distributed among the four areas listed above as follows: 3 hours in A; 7 hours each in any two of the Areas B, C, or D. Substitutions from other departments may be approved.

Courses

- 301-3 Philosophy of Religion. (See Philosophy 301.)
- 302-3 Contemporary Western Religious Thought. Issues and writers in the contem-

- porary religious scene in Europe and America, with an option for individual study projects.
- 310-3 Religious Foundations of Western Civilization.** Origins and interactions of Judaism, Hellenism, and Christianity and their influence on western views of nature, man, and society. Elective Pass/Fail.
- 311-3 Religious Foundations of Eastern Civilization.** Man, nature, and society considered in the light of Hinduism, Buddhism, Confucianism, and Taoism. Elective Pass/Fail.
- 320-6 (3, 3) Biblical Studies.** A survey of Jewish and Christian biblical writings: how they came to be written, for what purposes, and with what effects. (a) The Old Testament. (b) The New Testament. Elective Pass/Fail.
- 330-3 Early and Medieval Christianity.** The Christian movement from radical sect to imperial power, including political, social, and biographical analyses of major leaders. Special attention to undercurrents of apocalyptic prophecy and monastic variety as reservoirs of dissent against church order. Elective Pass/Fail.
- 331-3 Reformation and Modern Christianity.** The rise and development of modern Christian movements beginning with the reformers of the Catholic, Protestant, and Radical Anabaptist fronts of the 16th Century. Special emphasis on the growth and viability of the Protestant Ethic and personality type. Elective Pass/Fail.
- 332-3 Jewish Ideas and Culture.** Selected Jewish rites, beliefs, and customs and their cultural roots and consequences. Elective Pass/Fail.
- 333-4 African Traditional Religions.** (Same as Black American Studies 385.) The meaning and function of traditional religions within African societies. Topics included: Gods, spirits, ancestors, divination, witchcraft; the impact of Islam and Christianity; the Black religious experience. Elective Pass/Fail.
- 334-4 Islamic Religion and Culture.** Muslim faith and institutions with an emphasis on Muhammad, the Qur'an, the development of Muslim theology and philosophy, sufism, and the spread of Islam. Elective Pass/Fail.
- 335-4 Religion and Culture in America.** Tradition and change in the religious movements of the American people from the 17th to the 20th centuries in five periods: Puritans, Great Awakening; Revivalism and Social Reform; Social Gospel; Modern Disaffection. Special emphasis: Black and Women's Movements throughout this history. Elective Pass/Fail.
- 340-4 Psychology of Religion.** Four major categories studied in relation to the psychological foundations of religion: fantasy (Feuerbach, Freud, Jung); meaning (Camus, May, Frankl); consciousness (Allport, Maslow, Castaneda); eventfulness (James, Boisen, Erikson); special issues: behaviorism, altered states of consciousness. Elective Pass/Fail.
- 341-4 Mysticism and Human Transformation.** Comparative studies in selected "classical" mystics, their meaning for contemporary world views, and their relation to consciousness-raising techniques such as meditation and drugs.
- 352-4 Social Ethics and Life Style.** Ethical and critical study of the problem of life style. Issues considered: sexuality, work, family, intimacy, community responsibility, and patriotism. Basic question: How can one create an effective and humane life style?
- 353-4 Social Ethics and Modern Society.** (Same as Sociology 353.) Methods of social ethics applied to the study of problems in complex society such as: revolution, justice, oppression, escape, peace, and impersonalization. Basic question: How is life in complex society possible?
- 360-4 Religious Imagery in Literature.** Religious and anti-religious structures, themes, and symbols in selected works of literature. Special emphases: Shakespeare, Dostoevski, and Melville.
- 361-4 Religious Imagery in Visual Art.** Form, content, and historical context in selected works of painting and sculpture with respect to their religious and anti-religious meanings. Special emphases: Michelangelo, Rembrandt, and Goya.
- 410F-3 Comparative Religion.** (See Anthropology 410F.)
- 441-3 Themes in Greek Tragedies and the New Testament.** (See Classical Studies 441.)
- 496-1 to 4 Honors Readings in Religion.**

Science (College, Courses)

Courses

258-2 to 8 Work Experience Credit. Under special circumstances, practical experience in a scientific laboratory or other work directly related to comparable work in the department in which the student desires credit can be used as a basis for granting credit.

Such credit is sought by a petition to the department involved and is granted upon recommendation of the department chairman with the approval of the dean of the College of Science.

259-2 to 40 Occupational Education Credit. Under special circumstances formal occupational educational experiences directly related to student's major can be used as a basis for granting credit in the College of Science. Credit is sought by petition to the dean of the College of Science and must have his approval.

500-2 Science Information Sources.

Secondary Education (Department, Courses)

Students preparing to teach in junior high school or high school do not major in secondary education but must major in any of the areas listed below.

The Department of Secondary Education concerns itself with the sequences of professional education courses that lead to certification for teaching in the junior high school and the high school. In addition, it advises students concerning major and minor preparation.

Bachelor of Science Degree, College of Education

A student in the College of Education who is preparing to teach in junior high school or high school may select academic majors and minors from the following:

Teaching Area	Major	Minor ²
Agricultural Education	X	
Art	X	
Biological Sciences	X	X
Black American Studies		X
Botany ¹	X	X
Business Teacher Education	X	X
Chemistry	X	X
Earth Science		X
Economics	X	X
English	X	X
Foreign Languages	X	X
General Science	X	
Geography	X	X
Health Education	X ³	
History	X	X
Home Economics Education	X	
Instructional Materials		X
Journalism		X
Language Arts and Social Studies	X	
Mathematics	X	X
Microbiology		X
Music	X	X
Occupational Education	X	
Philosophy		X
Political Science	X	X
Physical Education for Men	X	
Physical Education for Women	X	X
Physics	X	X
Physiology		X
Psychology		X
Social Studies	X	

Sociology		X
Speech	X	X
Theater		X
Zoology ¹	X	X

¹A student with a major in botany or zoology should have a minor in the other in order to meet certification standards for teaching biology at the high school level.
²All minors used for certification purposes must include a minimum of 18 semester hours.
³Minimal requirements for certification in health education and driver education may be found in this catalog section titled Health Education.

Standard High School Certificate

In addition to entering the secondary education program directly from within the College of Education, a student may enter the program of the College of Education by transfer (1) from the General Studies program (provided the individual has attained 30 semester hours), (2) from other academic units, or (3) from other institutions of higher education. Each student who wishes to apply for the State of Illinois Standard High School Certificate through the entitlement process must fulfill the following requirements of the teacher education program at Southern Illinois University at Carbondale.

1. The individual must have completed a baccalaureate program at Southern Illinois University at Carbondale.
2. The individual must meet requirements for certification related to the state and federal constitutions by:
 - a. taking GSB 212 or 300
 - b. taking a course in American history or political science other than those listed in "a", above, and pass the constitution test administered by the Southern Illinois University at Carbondale Student Affairs Research and Evaluation Center.
 - c. presenting written notification from another institution that a course in American history or political science has been passed and that the Illinois and United States Constitution tests have been passed.
3. Students who elect to pursue a Bachelor of Science degree in the College of Education must complete the requirements for the major specified for the program to which they have been admitted. There are, however, no general requirements in foreign languages or mathematics in the Department of Secondary Education except as such subjects are among required courses in General Studies.
4. The individual must meet the requirements in health and physical education which can be satisfied by taking GSE 201-2 and two hours in GSE 100-114 courses.
5. The individual must complete either one major of at least 32 semester hours or three approved minors each of a minimum of 18 semester hours.
6. The individual must, if working for certification at the secondary level, complete the following sequence of professional education courses.

Professional Education Sequence	24
Decision Component	
Education 201	1 ¹
Basic Professional Block	
Education 301	2
Education 302	2
Education 303	2
Education 304a, b, c, d, e, or f	2

¹Must be completed prior to admission to the teacher education program.

Professional Semester	
Education 350	3
Education 400	4
Education 401	8

7. The individual must satisfy the student teaching prerequisites. (See catalog section titled Professional Education Experiences.) Anyone who wishes to qualify for the Standard Special Certificate for grades K through 12 should see below.

An individual in an academic unit other than the College of Education who desires to obtain a Standard High School Certificate must follow the teacher preparation program as described in this catalog.

Standard Special Certificate

The Standard Special Certificate is valid for four years for teaching the special subject or subjects named on the certificate in grades kindergarten through 12. Special subjects for which students at Southern Illinois University at Carbondale may qualify for a standard special certificate include special education, physical education for men, physical education for women, art, and music. This certificate may be issued to one who has earned a baccalaureate degree in the appropriate area at Southern Illinois University at Carbondale and who presents evidence of having earned credit as follows:

General Studies Requirements	45 ¹
Professional Education Sequence	24
Decision Component	
Education 201	1 ²
Basic Professional Block	
Education 301	2
Education 302	2
Education 303	2
Education 304a, b, c, d, e, or f	2
Professional Semester	
Education 350	3
Education 400	4
Education 401	8

Major Requirements and Electives³ (refer to major)

Total	120
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¹General studies requirements must include courses referred to under the Standard High School Certificate section above, items 2, 3, and 4.
²Must be completed prior to admission to the teacher education program.
³The number of hours of electives will depend upon the major field selected. The total of general studies requirements, professional education requirements, the major, and elective hours must total at least 120 semester hours.

Courses

340-3 Teaching Reading in High School. A foundation course in how to teach reading in junior and senior high school; developmental and remedial reading programs; appraisal of reading abilities; methods and materials of instruction.
375-1 to 6 Individual Research. Selection, investigation, and writing of a research topic, in one of the following areas: (a) curriculum, (b) supervision, (c) language arts, (d) science, (e) reading, (f) social studies, (g) problems in secondary education, (h) junior high school methods, (i) instruction.
406-3 Diagnosis and Correction of Reading Problems of Secondary Students. For secondary teachers who desire a knowledge of methods and materials to be used for diagnostic and remedial purposes. Prerequisite: 340 or consent of instructor.

- 407-4 (2, 2) The Middle and Junior High School.** (a) Organization, administration, and curriculum. (b) Problems. Enables teachers to discover and evaluate new content methods and materials available and develops teacher-made functional instructional models.
- 470-2 Student Activities.** Analysis of extra-class activities and programs in secondary schools with a focus on the status, trends, organization, administration, and problems.
- 480-2 Simulation and Gaming.** (See Instructional Materials 480.)
- 481-3 Advanced Teaching Methodologies.** A graduate level course which focuses on new teaching strategies and curriculum materials for the secondary school classroom.
- 485-2 Problems Related to Teaching Disadvantaged Youth.** For those working in classrooms with disadvantaged youth. Emphasis is on four areas: the characteristic of the disadvantaged; the student's attitude regarding the disadvantaged; effective teaching strategies for the disadvantaged; and microteaching videotaped lessons of appropriate teaching styles.
- 487-2 Teaching the Natural Sciences in Secondary Schools.** Organized on a contract and option basis. Objectives of science education; instruction methods and techniques appropriate for teaching science; development of teaching skills through microteaching; development of instruction unit.
- 488-2 Principles and Trends in Social Studies Education.** Evaluation and study of the curricular, organizational, and instructional trends in social studies at the junior high, senior high, and community college level.
- 490-3 Workshop in Economic Education.** (See Economics 490.) Elective Pass/Fail.
- 498-2 to 6 Field Study Abroad.** Orientation and study before travel, readings, reports, and planned travel. Includes visits to cultural and educational institutions.
- 506-3 Reading in the Secondary School.**
- 508-3 Current Developments in Selected Subject Areas in Secondary Schools.**
- 510-3 Seminar: Problems in Secondary Reading.**
- 511-3 Curriculum Organization.**
- 514-3 Organization and Administration of Reading Programs.**
- 518-3 Supervision of Professional Education Experiences.**
- 521-8 (4, 4) Diagnosis and Correction of Reading Disabilities.**
- 562-3 Secondary School Curriculum.**
- 564-3 Secondary School Principalship.**
- 566-2 Seminar in Instruction.**
- 571-3 Seminar in Curriculum.**
- 572-3 Seminar: Research and Evaluation in Secondary Education.**
- 588-3 Social Studies Education in the Secondary School Curriculum.**
- 590-1 to 6 (1 to 2 per topic) Readings.**
- 593-2 to 6 (2 per topic) Individual Research.**
- 594-1 to 6 Practicum.**
- 595-1 to 6 Internship.**
- 596-2 to 6 Field Work.**
- 597-2 Seminar in Proposal Development.**
- 598-1 to 6 Workshop in Secondary Education.**
- 599-1 to 6 Thesis.**
- 600-1 to 32 (1 to 16 per semester) Dissertation.**

Secretarial and Office Specialties (Program, Specialized Major, Courses)

The business world offers many opportunities for secretarial and office personnel with special interests and extensive skills in specific areas. Both men and women find this a rewarding career field.

A student may earn credit by class attendance; transferring credits from an accredited post-secondary school, such as a community college; passing a proficiency examination; or credit granted for work experience.

The student may prepare for a position in a field of special interest by working with an adviser to choose from a variety of allied health, technical, graphic, and business courses to build upon the basic secretarial requirements in creating an individualized program of study. The student interested in legal secretarial work might take additional courses in legal shorthand, jury charge, two-voice testimony, legal office procedures, and business law. One who wishes

to become a medical secretary might develop a program including courses in physiology, medical shorthand, and medical office procedures. The student working toward a specialization for insurance secretaries might take courses in business form design, technical writing, insurance, machine transcription, and office administration and supervision. A program leading to a specialization for the international service secretary might include courses in international relations, current events, a foreign language, office procedures, and business law. Other possible specializations include engineering secretary, administrative assistant, technical secretary, or graphics and design secretary. Students in all areas of specialization will receive on-the-job training in an office related to their area of specialization.

The student may develop one of the special majors in the following manner:

1. The student should consult the program supervisor about a possible program.
2. The student should draft a program which is coherent and unified, showing courses he plans to take, and explaining the purpose of his program.
3. The completed program must have the support of at least one faculty sponsor.

Court and conference reporting may be pursued as a specialization within the associate degree program, and also is offered as a third-year specialization for those who have completed an associate degree secretarial program at a community college or other post-secondary institution. Students combine classroom instruction with actual courtroom experience in the company of an official reporter in preparation for the National Shorthand Reporters examination.

An advisory committee composed of professional secretaries and business executives serves the program. Current members are: Rosemary Hendricks, secretary development and manuals coordinator, Eli Lilly & Co., Indianapolis, Indiana; Marjorie King, personnel officer, St. Louis County Bank, St. Louis, Missouri; and Henrietta Linsey, personnel data, Ralston Purina Co., St. Louis, Missouri.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

<i>Requirements for Specialized Major in Secretarial and Office Specialties</i>	
GSD 101, 153	5
School of Technical Careers 101	2
Secretarial and Office Specialties 101a,b,c,d, 104, 105a, 106, 107, 109, and 102a,b,c,d or 103a,b,c,d	31
Electives dependent upon specialty program	30
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Total	68

Courses

- 101-10 (2.5, 2.5, 2.5, 2.5) Typewriting.** Upon successful completion of this course, the student will (a) develop proper touch typing techniques, manipulate machine parts, determine margins for and type basic business communications; (b) set up and type manuscripts and related materials; (c) set up and type business related communications; (d) set up and type governmental, insurance, and legal materials, and develop a workable skill on the executive typewriter. Lecture one hour. Laboratory three hours. Must be taken in sequence.
- 102-10 (2.5, 2.5, 2.5, 2.5) Gregg Shorthand.** Upon successful completion of this course, the student will (a) demonstrate shorthand proficiency by reading and writing outlines

and taking dictation at various speeds; (b) demonstrate further shorthand skill by taking dictation at faster speeds and transcribing the dictated material; (c) attain higher speed and accuracy skills with emphasis on mailability; (d) continue to attain higher speed and accuracy skill with mailability emphasis. Lecture/laboratory two and one-half hours. Must be taken in sequence.

103-10 (2.5, 2.5, 2.5, 2.5) Machine Shorthand. Upon completion of this course, the student will (a) be able to write on the machine by touch words by sound according to the touch shorthand theory patterns; write touch shorthand abbreviations, derivatives, brief forms, and punctuation symbols; read his own shorthand notes as well as printed text notes; (b) take new-matter dictation for five minutes and transcribe that material, transcribe letters in mailable form using the proper spelling, punctuation, English, and erasing techniques, and transcribe notes from 20 to 25 wpm; (c) write an extensive vocabulary of words, abbreviations, and derivatives; take new matter dictation for five minutes and transcribe that material accurately; (d) transcribe letters in mailable form using the proper spelling, punctuation, English, and erasing techniques; transcribe notes in a 30-minute period at the rate of 25 to 30 wpm; write machine shorthand from office style dictation, read own shorthand notes as well as printed text notes with accuracy. Lecture one hour. Laboratory three hours.

104-2 Machine Transcription (Introduction). Upon successful completion of this course, the student will properly operate and care for a transcribing unit and develop transcription speed by typing basic business communications from recordings; develop transcription techniques such as typing, grammar, punctuation, sentence structure, form, and arrangement, as well as develop a higher transcription speed. The student will be required to make decisions in a variety of assignments. Lecture one hour. Laboratory two hours.

105-6 (3, 3) Accounting. Upon completion of this course, the student will (a) perform the steps of the accounting cycle by using the journal, ledger, and related forms; and solve various problems through the use of business working papers, cash receipts, disbursements, accounts receivable and payable, inventory valuation, plant asset valuation, and payroll and accounting systems (Lecture two hours. Laboratory two hours.); (b) apply knowledges learned concerning the various underlying theories of the accounting principles to partnerships and corporate forms of business; and solve problems in cost and tax accounting with emphasis on management control. Lecture three hours.

106-1 Reprographics. Upon successful completion of this course, the student, given a particular reproduction job, will determine the most appropriate reproduction process by considering pertinent factors. He or she will then perform the necessary operations to reproduce the copies by using the duplicator, mimeograph, offset, and a variety of copiers. Lecture/laboratory two hours.

107-2 Filing. Upon successful completion of this course, the student will apply filing rules to alphabetic, subject, numeric, and geographic methods; determine the proper supplies for any given filing situation; and perform proper filing techniques in an organized, workable manner. Lecture/laboratory three hours.

109-3 Calculating Machines. Upon successful completion of this course, the student will demonstrate operational skill on the electronic calculator, ten-key adding machine, full-key adding machine, rotary calculator, and accounting machines. Production standards are used to measure skill proficiency. Lecture one hour. Laboratory three hours.

201-2 to 8 Cooperative Secretarial Experience. Upon successful completion of this course, the student will apply knowledges and skills learned in classroom situations to on-the-job situations in an office closely related to the student's specialty; apply knowledges and skills learned in classroom situations to courtroom situations. Minimum of one hour conference and twenty hours work experience per week.

202-3 Fundamentals of Business. Upon successful completion of this course, the student will be able to apply his knowledge of business ownership, management, organization, office physical factors, personnel, finance, quantitative controls, decision making, and the legal and regulatory environment of business. Lecture three hours.

203-6 (3, 3) Business Law. (a) The course will emphasize the social forces and legal rights of law as it deals with the expression of social objectives, criminal and business law, and the law of torts and business; the student will identify, define, and describe contracts, agency and employment and commercial paper through oral and written reports, examinations, and case studies. Lecture three hours. (b) The course will emphasize the law as it deals with personal property and bailment, partnership, corporations, real property, and government regulations. Through the use of oral and written reports, case studies and examinations, the student will demonstrate his abilities in the course. Lecture three hours.

204-1 Machine Transcription. Upon successful completion of this course the student will be able to demonstrate the proper mechanical operation of transcribing units and techniques. Lecture one hour.

205-2 Office Management and Supervision. Upon successful completion of this

course the student will demonstrate competency in the planning, organizing, and controlling of a business office. He will identify proper managerial skills, managerial roles, office services, physical facilities, and records management. Lecture two hours.

206-3 Salesmanship. Upon successful completion of this course, the student will be able to apply his knowledge of the basics of selling, the sales transaction, special mediums for selling, selling policies, and selling oneself (emphasis on job application). Lecture three hours.

207-2 Personality Development. Upon successful completion of this course, the student will be able to demonstrate knowledges learned concerning personal hygiene, personality, poise and charm, clothing, and personal ethics. Lecture two hours.

211-3 Medical Typewriting. Upon successful completion of this course, the student will produce a variety of medical office communications at the typewriter at speeds commensurate to her straight-copy speed. Lecture one hour. Laboratory three hours.

212-6 (3, 3) Medical Shorthand. (a) The student will demonstrate the use of medical terminology, including prefixes and suffixes; spell and define medical terms and special terms and definitions used in consultation reports and medical case histories. (b) Increase speed and proficiency in the writing of medical case histories and consultation reports as well as medical vocabulary, phrases, special terms, short cuts and medical abbreviations. The student will apply knowledges learned in medical secretarial procedures which will be encountered in a medical secretarial environment. Lecture two hours. Laboratory two hours.

213-3 Medical Office Procedures. Upon successful completion of this course, the student will be able to perform necessary duties required of a medical secretary in a hospital, doctor's office, or any related medical secretarial position. Lecture two hours. Laboratory two hours.

214-1 Machine Transcription (Medical). Upon successful completion of this course, the student will be able to use the transcriber with proficiency in typing letters, consultation reports, and case histories. Further stress is put on accuracy and speed. Lecture/laboratory two hours.

221-3 Legal Typewriting. Upon successful completion of this course, the student will produce a variety of legal documents, papers, and office communications at the typewriter at speeds commensurate to her straight copy. Lecture one hour. Laboratory three hours.

222-3 Legal Shorthand. Upon completion of this course, the student should be acquainted with the responsibilities and duties of a law office secretary; know background information concerning law theory and practice; know the spelling, pronunciation, meaning, and shorthand outlines for commonly used legal terms; be able to take dictation of letters, legal papers, and documents at speeds ranging from 100 to 120 words a minute; be able to transcribe dictated material accurately and in final, proper form; be able to transcribe from cold notes with a minimum of 95 percent accuracy; and have a self-made notebook of legal papers and documents, legal terms, and office shortcuts for use on the job.

223-3 Legal Office Procedures. Upon successful completion of this course, the student will perform office duties peculiar to a legal office, as well as many procedures used in all types of offices. Lecture three hours.

224-1 Legal Transcription. Upon successful completion of this course the student will be able to transcribe from a transcribing unit most all types of legal documents, letters, and other legal office communications at a rate of speed commensurate to the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture/laboratory two hours.

225-3 Jury Charge. Upon completion of this course, the student should take three-minute dictation takes of jury charge, legal opinions, and other legal material at speeds ranging from 100 to 150 words a minute and transcribe that copy with a minimum of 95 percent accuracy; integrate into his writing the abbreviations and phrase shortcuts presented; transcribe from cold notes on jury charge material with a minimum of 95 percent accuracy; type legal correspondence, documents, and papers in mailable form; and compile a legal notebook consisting of legal terminology, abbreviations, court information, legal forms, shortcuts, letter samples, and depositions.

226-3 Two-Voice Testimony. Upon completion of this course, the student should: take dictation of two-voice and multiple-voice testimony at speeds ranging from 80 to 150 words a minute and transcribe that material with a minimum of 95 percent accuracy; transcribe cold notes material in a 30 minute period in final form; integrate the legal shortcuts and theory presented in class into his writing of shorthand notes. Lecture two hours. Laboratory two hours.

231-3 Executive Typewriting. Upon successful completion of this course, the student will produce various office communications at the typewriter at speeds commensurate to the straight-copy speed. Lecture one hour. Laboratory three hours.

232-3 Advanced Shorthand. Upon successful completion of this course, the student

will take dictation at speeds ranging from 100 to 120 words a minute, transcribe office communications with emphasis on mailability, and build transcription speeds ranging from 20-30 words a minute. Lecture one hour. Laboratory three hours.

233-3 Secretarial Office Procedures. Upon successful completion of this course, the student will be able to perform efficiently office duties, including relating to people, handling incoming and outgoing mail, handling telephone situations, composing office communications, setting up travel arrangements and conferences, performing basic record-keeping operations, and carrying out supervisory responsibilities. Lecture three hours.

234-1 Machine Transcription (Advanced). Upon successful completion of this course, the student will be able to transcribe from transcribing unit office communications which require the transcriber to make decisions before completing the mailable product. The student's speed should be commensurate to his straight copy speed. Lecture/laboratory two hours.

241-3 Insurance Typewriting. Upon successful completion of this course, the student will produce a variety of insurance office communications at the typewriter at speeds commensurate to her straight-copy speed. Lecture one hour. Laboratory three hours.

242-3 Insurance Shorthand. Upon successful completion of this course, the student will demonstrate competency by taking dictation with insurance vocabulary words at speeds ranging from 100-120 words a minute, transcribe insurance office communications with an emphasis on mailability, and build transcription speeds ranging from 20-30 words a minute. Lecture one hour. Laboratory three hours.

243-3 Insurance Office Procedures. Upon successful completion of this course, the student will perform office duties peculiar to an insurance office as well as many procedures used in all types of offices. Lecture three hours.

244-1 Machine Transcription (Insurance). Upon successful completion of this course, the student will be able to transcribe from a transcribing unit most all types of insurance office communications at a rate of speed commensurate to the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture/laboratory two hours.

245-3 Insurance Theory. Upon successful completion of this course, the student will analyze the ideas, problems, and principles found in all types of modern day insurance by looking at insurance from the viewpoint of the risk manager, society as a whole, and the individual consumer. Lecture three hours.

312-3 Advanced Legal Dictation. Upon completion of this course, the student should have increased the speed of his writing on legal matter to 200 words a minute; supplemented his vocabulary and short forms with more legal terms and Latin terms; become proficient enough in taking two-voice material at 200 words a minute for five minutes with 95 percent accuracy; one-voice legal opinion at 150 words a minute for five minutes with 95 percent accuracy; and literary material at 175 words a minute with 95 percent accuracy. (These are the requirements for the CSR Examination.) Lecture three hours.

313-5 Advanced Machine Shorthand. Upon completion of this course, the student should have built a take speed of 200 words a minute with accuracy tolerance of five percent on two-voice testimony material, and 150 words a minute on jury charge; reviewed abbreviations; increased transcription speed from 40 to 50 words a minute; built legal shortcuts; reviewed rules of punctuation; maintained speed dictation for long periods of time (eight-minute takes for transcript). Lecture three hours. Laboratory three hours.

315-3 Testimony and Depositions. Upon completion of this course, the student should have built speed to 200 words a minute in taking depositions; transcribed classroom takes as well as those taken in the Circuit Court at speeds ranging from 150 to 200 words a minute with 95 percent accuracy; become adept at taking medical two-voice testimony and depositions at speeds ranging from 150 to 200 words a minute with 92 percent accuracy. Lecture three hours.

316-1 Legal Ethics. Upon completion of this course, the student should understand the canons of professional ethics as listed in *Cochran's Law Lexicon* and the NSRA Code of Ethics; have observed the etiquette and duties of court reporters by attending court sessions; have taken testimony in court and transcribed that copy in proper, final form; have taken jury charges and legal dictation in class at speeds of 100 to 175 words a minute and transcribed that copy with a minimum of 95 percent accuracy; have taken depositions and transcribed them in state-approved form. Lecture/laboratory two hours.

317-2 to 5 Cooperative Court Reporting Experience. Upon completion of this course, the student will have gained actual courtroom experience (40 hour minimum); developed the necessary adaptability to take courtroom testimony; developed self-confidence in his ability to report; acquired training in taking four-part dictation and become acquainted with actual trial procedures; gained the opportunity of transcribing actual court proceedings and comparing transcripts with reporters; gained practice in reading notes aloud. Lecture one hour. Laboratory six hours.

Social Studies (Major)

Bachelor of Science Degree, College of Education

General Studies Requirements	45
Requirements for Major in Social Studies	49 ¹
GSB 300, 301, U.S. history elective	(6) + 3
World history, 205 plus six hours at 300 or 400 level	9
Economics 214, 215, economics elective	9
GSB 212, Political Science 213, political science elective	10
GSA 330, Geography 300, geography elective	(3) + 5
GSB 104, 202, Sociology 301	(6) + 4
Electives to be chosen from any one of three fields of anthropol- ogy, psychology, or sociology but concentration in one is recommended	7
Secondary Education 488	2
Professional Education Requirements	24
See Teacher Education Program, page 68.	
Electives	2
Total	120

¹Although the hours shown in parentheses are required for the major, they also will count toward the 45 hour requirement in General Studies.

Social Welfare (Department, Major, Courses)

The social welfare program offers a professional curriculum which is designed to meet the educational needs of students with career interests in the human services field and leads to a Bachelor of Science degree with a major in social welfare. The curriculum provides an interdisciplinary approach to understanding man in contemporary society, basic social problems, and some of the issues associated with the prevention and treatment of these problems.

The basic objectives of the program are; 1) to prepare students for immediate employment in social work positions which do not require graduate education; 2) to prepare students for graduate social work education; and 3) to contribute to the enrichment of general education by challenging students to understand social welfare needs, services, and issues.

Two of the basic courses in the curriculum are field experience courses. In these courses the student attends weekly seminars and works a minimum of 16 hours each week under supervision in a social agency where he provides direct services to clients. Arrangements can be made for *block placement* — internship in a social agency away from the University, perhaps in the student's home community for full-time attendance over a semester period.

The Department of Social Welfare is approved by the Council on Social Work Education, the national accrediting agency, and is recognized for advanced standing credit by most graduate schools of social work.

Bachelor of Science Degree, College of Human Resources

General Studies Requirements	45
Requirements for Major in Social Welfare	63

Social Welfare 375, 383, 401, 402, 404, 411, 416, 421, 441, 442	41
Political Science 426	3
Sociology: At least one of the following: 302, 335, 340, 406, 426, 424	4
Psychology: At least one of the following: 301, 303, 304, 305, 307	3
Electives from Social Welfare and/or other departments in the College of Human Resources	12
<i>Electives</i>	12
Recommended: Black American Studies 432, Economics 303, 304, History 365, Philosophy 342, Spanish 340	
<i>Total</i>	120

Courses

- 375-3 Social Welfare as a Social Institution.** Interdependence of social, cultural, political, and economic factors in the history, theory, and practice of social welfare, with special reference to development of the social work profession in response to welfare problems.
- 383-3 Introduction to Interviewing.** Theory and practice of interviewing as a means of gaining information, and of understanding and imparting the same. Focus is on the interview as a tool in social work, but principles are generally applicable.
- 391-2 Social Services and Minority Groups.** (Same as Black American Studies 391.) Exploration of the needs, experiences, and attitudes of minority groups pertaining to social welfare services. Implications for policy and programs in such areas of service as physical and mental health, child welfare, family planning, income maintenance, recreation, education, training, and employment. Prerequisite: 375.
- 396-1 to 3 Readings in Social Welfare.** Varying topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Prerequisite: consent of instructor.
- 401-4 Processes in Social Work (Casework).** Analysis of generic base of social work, of theory, rationale, and practice of casework. Prerequisite: 375.
- 402-4 Processes in Social Work (Group Work and Community Organization).** Analysis of social group work, community welfare organization methods, and interven-tive techniques. Prerequisite: 375.
- 404-3 Integrated Methods in Social Work.** A team-teaching seminar approach to exploring the interrelationship of casework, groupwork, and community work in syn-thesizing a gestalt impact on intervention and problem-solving techniques. Not for graduate credit. Prerequisite: 481, 482.
- 411-3 Methods of Social Research.** Principles and methods of scientific inquiry ap-plied to social work research and practice. Required for undergraduates. Not for graduate credit.
- 416-3 Human Behavior and the Social Environment.** A social systems approach to the study of human development and behavior. Examination of environmental forces impinging on the individual and implications for social work practice. Prerequisite: at least one approved upper division course in psychology, sociology, and political science. Open to College of Human Resources majors only.
- 421-3 Seminar in Problems and Issues in Social Welfare.** Critical evaluation of contemporary social work practice, innovations, social policy, and planning. Prerequisite: 401 and 402.
- 426-2 Comparative Social Welfare Systems.** An examination of social welfare policies and practices in other countries and by international organizations. Prerequisite: 375.
- 441-7.5 Social Work in Selected Agencies.** At least 16 hours per week of supervised experience in a social agency with concurrent weekly seminar. Not for graduate credit. Prerequisite: 401 and 402 and consent of instructor. Mandatory Pass/Fail.
- 442-7.5 Advanced Field Practicum.** Supervised field work experience in a social agency with concurrent weekly seminar. Sixteen hours per week. Not for graduate credit. Prerequisite: 441 and consent of instructor. Mandatory Pass/Fail.
- 451-2 Seminar in Social Casework.** A problem-solving approach based on case

studies aims to explore alternate methods in counseling of individuals and families. Prerequisite: permission of instructor.

452-2 Seminar in Group Treatment. Study of theory and practice in social group work covering various methods of group treatment interventions. Prerequisite: consent of instructor.

453-2 Seminar in Community Work. Study of a variety of strategies of intervention in agency and grass roots decision-making processes leading to social change through citizen participation. Prerequisite: consent of instructor.

461-2 Child and Family Services. Problems of child-parent relationships and difficulties in social functioning of children and adolescents. Adoptions, foster home and institutional placements, protective services. Prerequisite: permission of instructor.

462-2 School Social Work. Organization, development, and administration of school social work. Referrals for school social work services. Functions and responsibilities related to pupil personnel services. Evaluation, school placement, remedial procedures, cooperation with home and community agencies. Prerequisite: permission of instructor.

463-2 Social Work with the Aged. Basic concepts of social work methods applied to the older adult group. Characteristics of the aged group, its needs and potentials. Social trends and institutions involved in services to the aged. Prerequisite: permission of instructor.

464-2 Public Welfare. Social work knowledge, values, and techniques in public assistance. Care and rehabilitation of the public welfare client affected by social problems and social change. Prerequisite: permission of instructor.

465-2 Strategies in Health and Mental Health. A survey of current legislative and service trends in health programs under governmental and voluntary auspices. Preventive and restorative concepts will be explored in relation to chronic disease, aged adults, maternal and child health, and community health services. Role of social workers as an integral part of the medical and psychiatric case system. Prerequisite: permission of instructor.

496-1 to 3 Independent Research in Social Welfare. Not for graduate students. Prerequisite: consent of instructor.

Sociology (Department, Major, Courses)

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements	15
Requirements for Major in Sociology	28
GSB 203	(4)
Sociology 497 senior seminar	4
Sociology (Two 400-level courses)	8
Sociology electives	16
Electives	32
Total	120

Minor

A minor in sociology consists of a minimum of 15 hours. Students completing a minor in sociology to meet part of the requirements for a teaching certificate in the State of Illinois must complete a minimum of 18 hours.

Honors Program

The department offers a honors program for academically outstanding sociology majors. Qualifications for acceptance into this program consist of: (1) an overall grade point average of at least 3.00; (2) completion of 8 hours in sociology courses with a grade point average of at least 3.25. Three honors courses are offered at the junior and senior class levels. For details, qualified

students interested in this program should consult the director of undergraduate studies in the Department of Sociology.

Courses

301-4 Principles of Sociology. An introduction to sociological theory, with an emphasis on various theoretical approaches to the study of Man and society. Prerequisite: GSB 203. Elective Pass/Fail.

302-4 Contemporary Social Problems. Review of the basic sociological perspectives used in the study of social problems; discussion and analyses of selected contemporary social problems; assessment of alternative courses of action for the solution of problems. Prerequisite: GSB 203. Elective Pass/Fail.

308-4 Statistics for Social Science. Methods and application of statistics in the social sciences. Measures to describe distribution, measures of relationship, statistical inference. Elective Pass/Fail.

312-4 Elements of Sociological Research. Types of research. Principles and steps in research procedure. Selected techniques. Prerequisite: GSB 203. Elective Pass/Fail.

316-3 Political Socialization. (See Political Science 316.)

332-4 Comparative Social Organization. Examination of social organization and institutions in pre-industrial and industrial societies. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

335-4 Urban Sociology. The structure, culture, and problems of modern cities, with emphasis on American cities; the impact of culture and structure on modern urban life; problems of community, social identity, mass culture, and social control; implications for urban planning. Prerequisite: GSB 203. Elective Pass/Fail.

340-4 Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structure, roles; and an examination of variation and change in family systems. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

351-4 Sociology of Religion. The origin and function of religious ideas and institutions in society; their relationship to social change and stability. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

353-4 Social Ethics and Modern Society. (See Religious Studies 353.)

371-4 Population. Characteristics of population, problems of growth, composition, distribution, differential fertility, international and internal migration. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

372-4 Criminology. The nature of crime; criminal statistics; causal factors; theories and procedures in prevention and treatment. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

374-4 Sociology of Education. Methods, principles, and data of sociology applied to the educational situation; relation of education to other institutions and groups. Prerequisite: consent of instructor or 301 or GSB 203. Elective Pass/Fail.

396-1 to 3 Readings in Sociology. Elective Pass/Fail.

396H-1 to 3 Honors Readings in Sociology. Topics selected jointly by student and instructor which ordinarily are not covered in depth in regular course offerings. Prerequisite: consent of department and instructor. Elective Pass/Fail.

397H-3 Honors Seminar in Sociology. Varying sociological topics studied in depth and breadth. Maximum opportunity for student participation in the exploration of the subject. Prerequisite: consent of department. Elective Pass/Fail.

406-4 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period. Prerequisite: two courses in sociology or consent of instructor. Elective Pass/Fail.

415-3 Logic of the Social Sciences. (See Philosophy 415.)

424-4 Social Movements and Collective Behavior. A sociological analysis of the behavior of collectivities in uninstitutionalized settings; crowds, masses, publics, and social movements will be examined with relation to their social and cultural backgrounds, forms of expression and organization, and their functions in society. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

426-4 Social Factors in Personality and Adjustment. Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodological approaches — symbolic interaction, role theory, developmental social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization. Prerequisite: GSB 321, Psychology 301, or Psychology 307, or consent of instructor. Elective Pass/Fail.

435-4 Social Stratification. A comparative study of social class systems, with emphasis on the American system. Relationships of class position to behavior in family, religion, politics, etc. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

437-4 Sociology of Rural Development. Rural development and rural social problems in the United States and other countries. Concepts of rural and urban, developed and under-developed, characteristics of rural populations and institutions; rural development analyzed functionally and historically. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

450-4 Social Thought. Traces the historical development of sociology from its beginnings in the Enlightenment to the classical expositions of the early 20th Century.

454-4 Sociology of Science. Emphasis on the origins and growth of science in historical perspective, reciprocal relations between science and society in the 20th Century, science as a social system, differentiation within and relations between disciplines, and implications of the social organization of scientific research and funding. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

460-4 Sociology of Medicine. Examination of the sociological factors involved in health and illness, the role of medicine in society, the organization of medical care and health institutions in the United States, and the prospects for sociological research in this area. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

471-4 Demography and Ecology. The demographic focus includes basic techniques and selected issues in population studies. The focus upon human ecology concerns the spatial and temporal organization of population and institutions with special reference to the organization of rural and metropolitan communities. Research applications will be emphasized. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

472-3 The American Correctional System. (See Administration of Justice 472.)

473-4 Juvenile Delinquency. (Same as Administration of Justice 473.) Nature of sociological theories of delinquency; analytical skills in studying the delinquent offenders; systematic assessment of efforts at prevention, control, and rehabilitation in light of theoretical perspectives. Prerequisite: GSB 203 and Sociology 302 or 372. Elective Pass/Fail.

475-4 Political Sociology. (Same as Political Science 419.) An examination of the nature and function of power in social systems at both the macro- and micro-sociological levels of analysis, the social bases of power and politics; and various formal and informal power structures; the chief focus will be on American society. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

497-4 Senior Seminar. Contemporary issues in sociology and the analysis of these issues. Prerequisite: senior standing with 20 hours in sociology or consent of instructor. Elective Pass/Fail.

498-1 to 4 Independent Research. With a faculty member the student arranges a research topic resulting in a paper or report. Prerequisite: senior standing with 20 hours of sociology and consent of instructor. Elective Pass/Fail.

498H-1 to 4 Honors Independent Research. Advanced research study of a problem. Not for graduate students. Prerequisite: consent of department. Elective Pass/Fail.

501-4 Survey of Sociological Theory.

502-4 Seminar on Theoretical Systems in Sociology.

506-4 Seminar on Contemporary Sociological Theory.

512-5 Sociological Research.

519-4 Methodological Foundations of the Social Sciences.

521-4 Seminar in Social Psychology.

522-4 The Sociology of Small Groups.

526-8 (4, 4) Quantitative Methods in Sociology.

529-4 Sampling and Inference in Social Research.

530-2 to 12 (2 to 4 per topic) Topical Seminar in Sociology.

532-4 Urban Social Structure.

537-4 Sociology of Law.

539-4 Seminar in Complex Organization.

542-4 Seminar on the Family.

543-4 Seminar in Family Variability and Change.

551-4 Sociology of Religion.

562-4 Deviance and Disorganization.

564-4 Social Factors in Health and Illness.

566-4 Sociology of the Community.

572-4 Seminar in Criminology.

574-3 to 4 Seminar in the Sociology of Education and Science.

591-1 to 4 Individual Research — Supervised Research Projects.

596-1 to 8 Readings in Sociology.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Special Major (Major)

In addition to the regular major, the University encourages a student with special needs and interests to design his own major. He may develop a special major in the following manner:

1. The student should consult a faculty member about a possible program.
2. The student should draft a program which is coherent and unified, showing the courses he plans to take, and explaining the purpose of his program.
3. The completed program should have the support of at least one faculty sponsor and the dean or deans of the academic units involved.
4. Final approval including the title designation of the major must come from the dean of university programs.

Approval of a special major does not exempt a student from any University requirements or from any of the requirements of the academic unit from which his degree will be awarded.

Special Education (Department, Major, Courses)

In the Department of Special Education, teachers are prepared to work with behaviorally disordered, mentally retarded, and learning disabled children. Students seeking the Standard Special Certificate will complete a 120 semester hour program leading to approval in one of the three handicap areas listed above. Students who wish to obtain joint certification in special education and elementary education must complete a 148 or 149 hour program.

Bachelor of Science Degree, College of Education

SPECIAL EDUCATION MAJOR — STANDARD SPECIAL CERTIFICATE WITH APPROVAL IN BEHAVIORAL DISORDERS, OR MENTAL RETARDATION, OR LEARNING DISABILITIES

<i>General Studies Requirements</i>	45
GSA: 9 hours	
GSB: 9 hours including 202 and 300 or 301	
GSC: 12 hours including GSC 100, 101, or 205; must include one music and one art course	
GSD: GSD 101, 117 or 118, or 119, speech; 107 or equivalent or 4 hours from GSD 113 and either 110 or 112	
GSE: 4 hours including 201 and two one-hour activity courses	

<i>Additional General Education Requirements for Certification</i>	13-14
Art 348 or Occupational Education 303	
Music 300 or 302	
Physical Education for Women 319 or Physical Education for Men 305	
Mathematics 308	
Psychology 301	

<i>Requirements for Major in Special Education</i>	50-51
College of Education Professional Requirements	26
Education 201, 301, 302, 303, 304, 350, 312-2, 400-4, 401	
Special Education Requirements	24-25
Special Education 400, 411, 420, 423, 425; one from certification area: 401, 402, 404; one from: 421, 430, 431; Elementary Education 310, 337	

Electives 12-20

Special Education 421, 430, 431

Psychology 305, 307 (both required in behavioral disorders)

Guidance 412 or Psychology 431 (one required)

Sociology 473 or Rehabilitation 406 (one required in behavioral disorders)

Total 120

SPECIAL EDUCATION MAJOR—JOINT CERTIFICATION IN SPECIAL EDUCATION AND ELEMENTARY EDUCATION SPECIALIZATION

General Studies Requirements 45

GSA: 9 hours

GSB: 9 hours including 202 and 300 or 301

GSC: 12 hours including GSC 100, 101 or 205; must include one music and one art course

GSD: GSD 101, 117 or 118 or 119, speech; 107 or equivalent or 4 hours from GSD 113 and either 110 or 112

GSE: 4 hours including 201 and two one-hour activity courses

Additional General Education Requirements for Certification 12-15

Art 348 or Occupational Education 303

Music 300 or 302

Physical Education for Women 319 or Physical Education for Men 305

Mathematics 308

Psychology 301

Requirements for Major in Special Education 70-71

College of Education Professional Requirements 26

Education 201, 301, 302, 303, 304, 350, 312-2, 400, 401

Special Education Requirements 26-27

Special Education 400, 411, 420, 423, 425; one from certification area: 401, 402, 404; one from: 421, 430, 431; Education 401-8 (student teaching, special education)

Elementary Education Requirements 18

Elementary Education 310, 337, 413, 423, 424, 441

Electives (must bring total in general education to 78) 18-19

Special Education 421, 430, 431

Psychology 305, 307 (required in behavioral disorders)

Guidance 412 or Psychology 431 (one required)

Sociology 473 or Rehabilitation 406 (one required in behavioral disorders)

Total 148-149

Courses

400-3 Introduction to Special Education. Physical, mental, emotional, and social traits of all types of exceptional children. Effects of handicaps in learning situations. Methods of differentiation and techniques for rehabilitation. Case studies, observations,

and field trips may be required. Prerequisite: Psychology 301 or 303 or consent of instructor.

401-3 Problems and Characteristics of the Behavior Disordered Child. Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services for school children who are emotionally disturbed and/or socially maladjusted. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior. Prerequisite: 400 or consent of instructor.

402-3 Problems and Characteristics of the Mentally Retarded Child. Emphasizes a developmental approach to understanding and dealing with children with low mental abilities. Considers historical, theoretical, and practical factors pertinent to mental retardation. Prerequisite: 400 or consent of instructor.

403-3 Problems and Characteristics of the Gifted Child. Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: 400 or consent of instructor.

404-3 Problems and Characteristics of the Learning Disabled Child. Behavioral, emotional, physical, and learning characteristics of children with learning disabilities. Emphasis on receptive and expressive modalities for learning; theories dealing with causes and management. Prerequisite: 400 or consent of instructor.

405-3 Introduction to the Education of the Preschool Handicapped Child. Introduction to the education of preschool handicapped children. A specific focus on classroom procedures for enhancing delayed development including classroom organization and planning. Prerequisite: 400 and consent of instructor and chairman.

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the personality characteristics and educational needs of children who are diagnosed as mentally, emotionally, or physically handicapped. Prerequisite: 400, consent of instructor and department chairman.

411-3 Assessment and Planning for Remediation in Special Education. Theories of special tests and development of remedial programs for children with special learning problems. Purchase of testing materials costing approximately \$5 is required. No text is required. Prerequisite: 400.

412-3 Assessment and Remedial Planning for the Preschool Handicapped Child. An introduction to the assessment of preschool handicapped children including the specifics of screening, tests used by the classroom teacher and observational procedures. Prerequisite: 405, or concurrent enrollment, and consent of instructor and chairman.

420-3 Methods and Materials for Teaching Elementary Level Handicapped Children. Methods and materials needed for remedial education of children with behavior disorders, learning disabilities, and reduced mental ability. Prerequisite: 411 and 410a, b, or c.

421-3 Methods and Materials for Teaching Pre-School or Elementary Severely Handicapped Learners. Emphasis on methods of teaching those with severe handicaps. Minimum of one video-taping session, and individualized tutoring, are required of all participants. Prerequisite: 410a, b, or e, consent of instructor.

423-2 Directed Observation of Handicapped Children. Student observation and participation in group and individual work with handicapped children. Prerequisite: 411 or consent of instructor.

425-2 Home-School Coordination in Special Education. Consideration of the techniques used in parent interviews, conferences, and referrals by school personnel with parents of handicapped children. Prerequisite: 400 and consent.

430-2 Work-Study Programs for Handicapped Adolescents to Age 21. Deals with modifications of and additions to school programs to insure that they are appropriate to the needs of the mildly handicapped adolescent. Includes detailed coverage of joint work-study programs as preparation for vocational adequacy. Prerequisite: 420.

431-2 Work-Study Programs for Severely Handicapped Adolescents to Age 21. Deals with program offerings in public school special education programs designed to prepare the severely handicapped adolescent for his maximum vocational adequacy. Prerequisite: 420, 421.

456-4 (2, 2) Music for Exceptional Children. (See Music 456.)

490-1 to 5 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to selected seniors and to graduate students. Prerequisite: 400, consent of instructor.

500-3 Special Education Research Problems.

502-2 Special Education Research Paper.

505-3 The Pre-School Handicapped Child.

511A-3 Advanced Assessment and Remedial Planning in Special Education.

511B-3 Advanced Remediation in Special Education.

512-3 Advanced Assessment and Remedial Planning for the Preschool Handicapped Child.

- 513-3 Organization, Administration, and Supervision in Special Education.
- 514-3 Simulation of Administrative Tasks in Special Education.
- 515-2 Itinerant and Resource Teaching in Special Education.
- 517-2 The Atypical Child and Social Agencies.
- 518-2 to 6 Workshop in Special Education.
- 580-3 Master's Seminar: Issues and Trends in Special Education.
- 582-2 Post-Master's Seminar: Remedial Models in Special Education.
- 583-2 Post-Master's Seminar: Program Coordination in Special Education.
- 584-2 Doctoral Seminar: Research in Special Education.
- 585-2 Doctoral Seminar: Evaluation in Special Education.
- 591-2 to 5 Independent Investigation.
- 594-1 to 6 Practicum in Special Education.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

Speech (Department, Major, Courses)

The Department of Speech provides the undergraduate with a substantial background in the history, theory, and application of verbal and nonverbal communication. The program specializations are designed to develop the language and personal skills for professional, artistic, and instructional careers in human communication; to explore the social and cultural implications of human interaction; to compare the aesthetic and instrumental nature of oral communication; and to provide catholic and diverse opportunities for the study of and training for communication as personal perception and expression.

Bachelor of Science Degree, College of Communications and Fine Arts

SPEECH MAJOR—GENERAL SPEECH SPECIALIZATION

<i>General Studies Requirements</i>	45
Must include GSC 200, GSD 152 or 153	
<i>Requirements for Major in Speech</i>	36
Speech 221, 230, 261, 262, 325, 340, 370, 442	20
Electives in Speech which must include at least three 400-level courses	16
<i>Electives</i>	39
<i>Total</i>	120

SPEECH MAJOR—SPEECH EDUCATION SPECIALIZATION

<i>General Studies Requirements</i>	45
Must include GSB 202, 212, GSC 200, 203, GSD 152 or 153, GSE 201	
<i>Requirements for Major in Speech</i>	48
Speech 221, 230, 261, 262, 325, 370, 432	19
Mass media courses selected from the following: Radio-Television 300M, 467, Journalism 300, Speech 452	6
Theater 217, 354, 409	7
Speech electives to be selected from the following courses, with at least 8-9 hours at the 400-level: 290 or 390 (maximum of 2 hours), 326, 340, 362, 401 or 402, 430, 433, 441 or 443, 471 or 472 or 474, Theater 402	16

<i>Professional Education Requirements (including Speech 431)</i>	27
See Teacher Education Program, page 68.	

<i>Total</i>	120
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SPEECH MAJOR—ORAL INTERPRETATION SPECIALIZATION

<i>General Studies Requirements</i>	45
Must include GSC 200, GSD 152 or 153, GSE 103d or 113d (2 hours); GSB 202 strongly recommended	
<i>Requirements for Major in Speech</i>	49
Speech 221 or 261, 262, 326 or 362, 370, 390 (2 hours), 433, 471, 472, 474, 491 (3 hours)	
	29
<i>English literature requirement</i>	12
Courses to be determined in consultation with adviser	
<i>Theater 203, 207, 213, 317</i>	8
<i>Electives</i>	26
Recommended that electives be in speech, music, film, sociology, psychology, English, theater	
<i>Total</i>	120

SPEECH MAJOR—PUBLIC RELATIONS SPECIALIZATION

The public relations specialization is an interdisciplinary program designed with the assistance of the Public Relations Society of America.

Building upon the liberal arts and sciences required of all students in the general studies program, the curriculum provides fundamental knowledge in social science, business management, marketing, political science, and research methods, and in communication through all types of media. The broad coverage of these disciplines provides a sound preparation for careers and graduate studies in public relations and the several areas included. Through flexibility in the choice of required electives, the student is able to select courses in the field of his special interest in preparing for graduate work and specific career goals.

Membership in the Raymond D. Wiley Chapter of the Public Relations Student Society of America provides opportunities for internships, field trips, job placement, involvement in on- and off-campus public relations projects, and association with professional practitioners.

The active internship program enables selected students to obtain work-study experiences under the supervision of qualified practitioners in industrial, educational, and non-profit organizations. In most cases academic credit is earned, and the student receives a stipend to defray living expenses.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Speech</i>	74-75
GSB 202, 203, 211, 212	(12) + 2
GSD 153 and 117 or 118 or 119	(4)
Speech 326, 380, 381, 480, 481	13
Journalism 300, 310, 311	9
Radio-Television 300M, 300P	8
Psychology 307	3
Social Welfare 383	3

Administrative Science 301	3
Marketing 304, 363	6
Political Science 340	3
Research Methods	3-4
Sociology 312, Marketing 390, or Journalism 305	
Accounting 210	3
Graphics	3
Design 335 or Journalism 315	
Required electives	15
Selected from speech, journalism, radio-television, administra- tive science, marketing, finance, economics, advertising, political science, psychology, sociology, English. Some rec- ommended courses are: Speech 290 (may be repeated to total of 3 hours), 358, 362, 451; Journalism 370; 372, 374, 376, 361, 391; English 290, 390 or other approved English writing courses.	
Internship: Speech 495-2 to 8. The internship/practicum in public rela- tions is open to selected students with consent of the director of public relations education. Hours taken here apply against 15 hours of re- quired electives or other substitutions approved by the director.	
Typing: Proficiency of 30 words per minute required. Business Educa- tion 201 can be taken for this purpose, but does not count toward major hour requirements.	

Electives	0-1
Total	120

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Must include GSC 200 and GSD 152 or 153	
Supplementary College Requirements	15
Requirements for Major in Speech	36
Speech 221, 261, 262, 311, 326, 340, 362, 370, 442	24
Speech electives which must include at least three 400-level speech courses	12
Minor	15
Electives	9
Total	120

Minor:

A 15-hour minor in speech should be planned in consultation with the chair-
man of the department or the undergraduate adviser. Students electing speech
as a minor in a teacher education program must include Speech 431.

Courses

Courses in speech are listed according to numerical order. However, the second
digit in the course number indicates its "locus" in the speech curriculum, as
follows:
00-09 Research Methods

- 10-19 Rhetoric and Criticism
- 20-29 Public Speech — Communication
- 30-39 Speech Education
- 40-49 Language Behavior
- 50-59 Political Speech — Communication
- 60-69 Interpersonal Speech—Communication
- 70-79 Oral Interpretation
- 80-89 Organizational Speech — Communication
- 90-99 Applied and Special Studies

221-3 Public Communication II. The components of effective speech, with actual preparation and presentation of several types of speeches. Prerequisite: GSD 153 or consent of instructor.

230-1 Introduction to Speech Education. Areas of speech education, their relevance and importance to the high school curriculum, and potential for prospective teachers. Practical information on content-focus in these areas. Restricted to students having nine or fewer hours in speech.

261-3 Discussion and Conference. Principles and methods of discussion and conference participation and leadership. Current problems are used as material for discussion.

262-3 Interpersonal Communication II. Focuses on face-to-face interaction and intergroup relations by combining information about human communication and practice in communication. Utilizes the laboratory method for learning to establish and develop communicative relationships with others. Prerequisite: GSD 152 or consent of instructor.

290-1 to 24 (1 to 3 per semester) Forensic Activities. Seeks to enhance the student's knowledge and skills as related to speech activities by providing opportunities for students to gain practical experience through participation in those activities. Those activities are debate, original oratory, extempore speaking, discussion, and forum activities. Limited to six hours of credit each year. A maximum of six hours of 290 and 390 may be applied on a speech major; a maximum of six hours toward graduation.

310-2 Speech Composition. Rhetorical techniques of public address. Two major speeches prepared, with every possible refinement. Prerequisite: 221.

311-2 Introduction to Rhetorical Criticism. Designed to assist the student in developing his own critical method based largely on a study of past and present concepts of rhetorical criticism.

312-2 Rhetoric of Social and Political Movements. Designed to isolate, analyze, evaluate, and describe social and political movements so the student can learn to understand and report the pattern of public discussion, the configuration of discourse, the physiognomy of persuasion, peculiar to that movement.

325-3 Argumentation and Debate. Through the study of argument, evidence, reasoning and oral advocacy this course seeks to insure competence in the ascertainment of truth by investigation and research and the establishment of truth through proof. The ultimate rationale for the course is the discovery and support of intelligent decisions.

326-3 Persuasion. The means of influencing individuals and groups through communication. Emphasizes the shaping of other's values, beliefs, attitudes and behavior primarily by the spoken word. Provides theoretical information about and practice in persuasive speaking, for sources and targets of persuasion.

340-2 Language and Speech: Introduction. Introduction to the language of speech, an interdisciplinary approach to the learning and use of language. The structure of speech interaction in relation to participants, situation and functions of communication. Emphasis on linguistic, psychological, sociological and developmental perspectives on language in speech communication.

358-3 Political Campaigns and Elections. (See Political Science 318.)
Elective Pass/Fail.

361-2 Nonverbal Communication. Nonverbal factors that influence the communicative interaction among persons. Review research findings and conduct projects germane to nonverbal communication. Readings, discussions, and research projects. Prerequisite: 262 or consent of instructor.

362-3 Communication and Social Process. Concentrates on the function of interpersonal communication in the development and operation of human communities. Special emphasis is given to the generation of a simulated community by the class participants.

370-3 Oral Interpretation II. Theory and practice in advanced interpretation techniques, with emphasis on the student as performer. Prerequisite: GSC 200 or consent of the instructor.

380-3 Business and Professional Speaking. A survey of organizational communication. Classical rhetorical theory, modern communication theory, general semantics fundamentals, and human relations. Composition and delivery of major speech. Briefing,

interview, and conference techniques. Audiovisual aids. Class attends civic group luncheon. Prerequisite: GSD 153.

381-3 Public Relations Policy and Practice. Philosophy, principles, policies, and practice of public relations. Historical review of industrial, institutional, governmental, and agency PR; managerial and communicative functions; internal and external publics. Lecture, audiovisual media, and guest public relations practitioners. Prerequisite: junior standing.

390-1 to 24 (1 to 3 per semester) Practicum in Interpretation. Practical experience in all aspects of individual and group performance. Limited to six hours of credit each year. A maximum of six hours of 290 and 390 may be applied to a major in speech; a maximum of six hours toward graduation. Prerequisite: consent of instructor.

401-3 Communication Theories and Models. An introduction to theory construction and model utilization in communication research. Critical analysis of existing communication theories in the social sciences as a basis for generating new models. Emphasis on the heuristic nature and function of the language/speech act paradigm in communication studies.

402-2 Empirical Research in Speech Communication. Principles of research design accompanied by a critical examination of research on oral communication. Prerequisite: 401 or consent of instructor.

421-3 American Public Address I. Critical studies of speakers, movements, and issues which reflect dominant social and political ideas in American history to 1850. Prerequisite: for undergraduates, 311 or consent of instructor.

422-3 American Public Address II. Critical studies of speakers, movements, and issues which reflect dominant social and political ideas in American history from 1850 to 1918. Prerequisite: for undergraduates, 311 or consent of instructor.

423-3 Contemporary Public Address. A critical study of speakers and speeches selected to present the characteristic ideas of leading social and political developments in national and international affairs since 1918. A lecture, reading, and discussion course. Prerequisite: for undergraduates, 311 or consent of instructor.

424-3 British Public Address. Critical study of British speakers. Selection of material will be governed both by men and the issues that moved men throughout British history. Prerequisite: for undergraduates, 311.

425-2 Studies in Argumentation. An in-depth study of advanced argumentation theory and an application of that theory to contemporary problems in advocacy. Prerequisite: for undergraduates, 325.

430-3 Speech in Elementary Schools. Survey of normal speech development with emphasis on the elementary school years. Concept of speech as skill to basic reading, writing, and spelling. Psychological and sociological variables affecting language as it relates to school learning. Speech experiences supportive of the child's linguistic, intellectual, and social development.

431-3 Speech in Secondary School. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: twelve hours of speech.

432-3 Secondary School Forensic Program. Designed to evaluate and plan the proper role of forensics in the secondary school and to prepare the students for their tasks as teachers and administrators in that program. Prerequisite: 325, GSC 200.

433-3 Creative Dramatics for Children. Materials, techniques, and procedures for conducting sessions in informal drama with emphasis upon its contribution to the total growth and development of the child. Includes lectures, observation, student participation. Prerequisite: junior standing.

435-3 Creative Dramatics for Young Adults. An exploration of advanced theories and techniques for conducting sessions in informal drama, with emphasis on the integration of creative dramatics in the junior high, high school, and college classrooms. Lecture, discussion, class projects, school visitation.

440-4 Language Behavior I. Psycholinguistic approach to the study of language learning and the early use of language. Theories and research in normal acquisition and development of grammatical structures, basic semantic categories, and rules of use in speech. Application of theories and research in first language learning to acquiring second languages.

441-4 Language Behavior II. Applicability of psychological and linguistic theories to social psychological aspects of speech communication. Relation of speech to other developing behaviors with particular attention to theories of cognition. Study of psychological and sociological variables affecting the functions of language for individuals and societies.

442-2 Psychology of Speech. Nature, development, and functions of speech behavior; application of psychological theories and research to the communication process in individuals and groups.

443-3 General Semantics. Formulations from the works of Alfred Korzybski and from

neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.

444-3 Language of Young Children. For teachers of young children and students of language. Theory of the development of language with attention to maturational and environmental correlates. Study of children's spoken language encoding and decoding behavior in relation to development of secondary skills of reading and writing and to general cognitive development.

451-3 Political Communication. (Same as Political Science 418.) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes, and behavior. Prerequisite: 358 or consent of instructor.

452-2 Interpersonal Communication and the Mass Media. A review, synthesis, and analysis of communication theory and research which deals with the process, interactive nature of interpersonal and mass channels of communication. Prerequisite: 401 or consent of instructor.

461-3 Laboratory in Interpersonal Communication I. Interpersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.

462-3 Laboratory in Interpersonal Communication II. Various theories of social and cultural change are explored. The role of interpersonal communication in the development of human consciousness is explicated. Projects are evolved by small groups that examine values and priorities of human nature and cultural nature.

471-3 Oral Interpretation: Prose. The study of the prose form through analysis and performance. Prerequisite: 370, GSC 200 or consent of instructor.

472-3 Oral Interpretation: Poetry. The study of poetic form through analysis and performance. Prerequisite: 370, GSC 200 or consent of instructor.

474-3 Group Performance: Readers Theater. Theory and practice in constructing and staging the compilation script form. Prerequisite: 370, or consent of instructor.

475-3 Group Performance: Chamber Theater. Theory and practice in adapting and staging prose fiction. Prerequisite: 370 and 471, or consent of instructor.

480-2 Studies in Organizational Communication. Study of communication systems and behavior within organizations. Demonstrates the relevance of communication to management operations, networks, superior-subordinate relations, production, employee morale, and organizational climates through the study of theory and research.

481-2 Public Relations in Cases and Campaigns. Advanced course in selected case studies provided by the Public Relations Society of America and other sources. Student groups design actual or simulated public relations campaigns through the four steps of research, planning, communications, and evaluation. Prerequisite: 381.

491-1 to 3 Independent Study. Creative project to be completed in one semester. Nature of assignment determined by student and instructor and approved by department chairman. Prerequisite: twelve hours of speech courses and consent of instructor.

492-2 to 8 Workshop in Oral Interpretation. Summer offering concentrating in specialized areas of oral interpretation.

495-2 to 8 Internship/Practicum in Public Relations. A professional semester for selected students specializing in public relations. Supervised by the director of public relations education and the PR group of a corporation, institution, agency, or counseling firm. Credit depends on the demands and complexity of the work the student performs. Evaluation is a joint function of the group professionals and the director. Prerequisite: selection by the director of public relations education.

502-3 Seminar: Empirical Communications Research.

503-3 Seminar: Non-Quantitative Research Methods.

510-4 Survey of Rhetoric.

511-3 Modern Rhetorical Theory.

512-3 Seminar: Rhetoric and Public Address.

526-3 Seminar: Studies in Persuasion.

531-3 Seminar: Speech Education.

539-2 Speech at University Level.

540-3 Seminar: Language Behavior.

561-3 Seminar: Studies in Discussion.

562-3 Philosophical Foundations of Speech.

563-3 Laboratory in Small Group Communication.

571-3 Theoretical Perspectives in Interpretation.

572-3 Critical Perspectives in Interpretation.

574-2 to 4 (2, 2) Studies in Interpretation.

575-3 Seminar: Research Problems in Interpretation.

593-1 to 3 Research Problems.

598-1 Proseminar in Speech/Communication.

599-1 to 6 Thesis.

600-1 to 36 (1 to 16 per semester) Dissertation.

Speech Pathology and Audiology (Department, Major, Courses)

The program in speech pathology and audiology has as its objective the training of qualified personnel to work with people impaired in either speech or hearing. The undergraduate curriculum is broad in scope and gives the student the necessary background for the professional program offered at the master's level. Both State and national certification require the M.S. degree. Positions in this field are available in the public schools, colleges and universities, and in highly specialized public or private clinics, hospitals, and agencies.

The program in speech pathology and audiology features two specialization tracks, one for students wishing to pursue careers in public or private clinics, and the other for those who wish to seek employment in the public schools. Students may also plan a special major program by following procedures outlined in the Undergraduate Catalog.

Clinical experience is obtained through work at the University's Clinical Center, the public schools in student teaching, special summer programs, the Marion Veterans Administration Hospital, A. L. Bowen Children's Center, the Anna State Hospital, and area hospitals and other community agencies.

Students are encouraged to plan programs of study to meet academic and practicum requirements for the Certificate of Clinical Competence of the American Speech and Hearing Association and the Standard Special Certificate — Certificate in Speech and Language Impaired. Planning at the bachelor's level will facilitate completion of ASHA and State of Illinois certification requirements in conjunction with the master's degree program.

Bachelor of Science Degree, College of Communications and Fine Arts

SPEECH PATHOLOGY AND AUDIOLOGY MAJOR—CLINICAL SPECIALIZATION

<i>General Studies Requirements</i>	45
GSA, GSB, GSC	30
GSA: 9 hour minimum from 3 different departments including 115 and 209	
GSB: 10 hour minimum from 3 different departments including 202, 203, 206	
GSC: 9 hour minimum from 3 different departments	
GSD 101, 117, 107, and 152 or 153	11
GSE: Health and physical education	4
 <i>Requirements for a Major in Speech Pathology and Audiology</i>	61
Psychology 211, 301, 305	10
Psychology: 12 hours selected from 307, 309, 311, 314, 411, 451	12
Rehabilitation 406	3
Speech Pathology and Audiology 200, 203, 205, 302, 303, 314, 316, 318, 319, 401, 419, 494, 495, and either 496 or 497	36
 <i>Electives</i>	14
 <i>Total</i>	120

SPEECH PATHOLOGY AND AUDIOLOGY MAJOR—PUBLIC SCHOOL SPECIALIZATION

A student in the College of Communications and Fine Arts who plans to be a public school speech and language clinician in Illinois, thereby needing to prepare to meet the requirements for the Standard Special Certificate — Certificate in Speech and Language Impaired, should follow the program listed below.

This Bachelor of Science degree program of study does not culminate in certification by either the State of Illinois or the American Speech and Hearing Association. The undergraduate public school program qualifies the student for graduate study providing all conditions for admission to the Graduate School have been met. Students must maintain the stipulated grade point averages for entrance to both student teaching and the Graduate School. Students pursuing the clinical specialization program are not required to take the education courses.

General Studies Requirements 45
 Same required courses as listed under the clinical
 specialization.

Requirements for a Major in Speech Pathology and Audiology 49
 Psychology 211, 301, 305 10
 Rehabilitation 406 3
 Speech Pathology and Audiology 200, 203, 205, 302,
 303, 314, 316, 318, 319, 401, 419, 494, 495,
 and either 496 or 497 36

Professional Education Requirements 24
 Education 304a,c, or e. See Teacher Education Program, page 68.

Electives 2

Total 120

Bachelor of Science Degree, College of Education

A student in the College of Education who wishes to become a speech clinician in the public schools should follow the plan listed above, in addition to any special requirements for a major in the College of Education.

Courses

- 100-0 to 1 Speech Clinic: Therapy.** For students with speech and hearing deviations who need individual help. Prerequisite: consent of instructor.
- 104-3 Training the Speaking Voice.** For those students who desire to improve their voice and articulation.
- 200-3 Phonetics.** Instruction in the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.
- 203-3 Introduction to Speech Science.** An introduction to the science of general speech including the history of research in the field and significant experimental trends in the future. Open to all students.
- 205-3 Introduction to Speech Pathology.** A general survey course devoted to a discussion of the various problems considered to be speech and hearing disorders with special emphasis on basic etiological classification schemes and their incidence in the current population. Opportunities for directed observation.
- 302-3 Phonological Development and Disorders.** A general introduction to the phonological development in children on a normative basis. In addition to introducing the student to the classical studies in articulatory development, this course provides a general exposure to the implications of classical phonetic theory, coarticulatory theory

and distinctive features theory as a framework for therapy and research. Prerequisite: 200 or concurrent enrollment.

303-3 Language Development and Disorders. Presentation of the progressive stages of language development in the areas of syntax and semantics. The student is acquainted with normal developmental processes and introduced to identification and remediation of therapeutics with children from ages three to twelve. Theoretical considerations and terminology related to traditional structural and transformation grammars are introduced as tools for interpreting the acquisition processes. Prerequisite: 200 or concurrent enrollment.

314-3 Anatomy and Physiology of Speech and Hearing Mechanisms. (Same as Physiology 414.) The anatomy and physiology of the vocal apparatus; primarily for majors in speech pathology; lecture and laboratory.

316-3 Introduction to Audiology and Audiometry. Basic orientation to the professional field of audiology, its history and its goals; basic acoustics, the phylogeny, anatomy and physiology of the human ear, and significant pathologies of the ear. Prerequisite: junior standing.

318-3 Parameters of Voice. Physio-acoustic parameters of voice quality variables evidenced in verbal communication. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders. Prerequisite: 205.

319-3 Stuttering. Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering.

401-3 Diagnostic Procedures in Speech Pathology. A general introductory course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Prerequisite: 200, 314.

407-2 Communicative Disorders: Cerebral Palsy. An introduction to cerebral palsy as a disorder, with an emphasis on etiology, problems, and approaches to therapy. Prerequisite: 205, 314, or consent of instructor.

408-2 Communicative Disorders: Cleft Palate. An introduction to the ontology and teratology of cleft palate, problems of personal and social adjustments, and principles of therapy. Prerequisite: 205, 314, 318, or consent of instructor.

419-3 Communication Problems of the Deaf and Hard of Hearing. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 316 or consent of instructor.

428-3 Speech and Language Disorders and the Classroom Teacher. Etiology and therapy of common speech defects. May be taken by all inservice teachers, seniors, and graduate students in education.

438-2 Problems of Communication and the Process of Aging. Reviews problems of communication related to the aging process and examines relevant diagnostic and therapeutic techniques. For non-majors only. Prerequisite: senior or graduate standing.

491-1 to 4 (1 to 2, 1 to 2) Individual Study. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chairman. Prerequisite: consent of chairman.

494-1 to 2 Clinical Practice: Phonological Disorders. Supervised clinical practicum in articulation. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 302.

495-1 to 2 Clinical Practice: Language Disorders. Supervised clinical practicum in language. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 303.

496-1 to 2 Clinical Practice: Hearing Disorders. Supervised clinical practicum in hearing disorders. Emphasis will be upon rudimentary clinical procedures in audiology. Prerequisite: 316, 419, or consent of instructor.

497-1 to 2 Clinical Practice: Hearing Diagnostics. Supervised clinical practicum in hearing diagnostics. Emphasis will be upon diagnostic techniques and preparation of reports. Prerequisite: 316.

500-3 Research Design in Speech Pathology and Audiology.

503-3 Laboratory Instrumentation in Speech Pathology and Audiology.

505-3 Phonological Acquisition in Children.

507-3 Modern Techniques for the Syntactically Impaired.

510-3 Stuttering: Behavior Assessment and Therapy.

512-3 Voice Disorders.

517-3 Psycholinguistic Correlates of Verbal Impairment.

520-3 Advanced Audiology I.

521-3 Advanced Audiology II.

525-3 Amplification for the Hearing Impaired.

- 526-3 Industrial and Community Hearing Conservation.
- 528-3 Seminar: Physio- and Psycho-Acoustics of the Ear.
- 529-3 Seminar: Experimental Audiology.
- 531-1 to 6 (1 to 3, 1 to 3) Experimental Phonetics.
- 533-3 to 6 (3, 3) Seminar: Speech Science.
- 536-3 Seminar: Administration of Speech and Hearing Programs.
- 540-3 Neuromuscular Disorders of Communication.
- 541-3 Neuropsychological Disorders of Communication.
- 544-3 Seminar: Phonology.
- 548-3 Stuttering: Behavior Theory and Research.
- 550-3 Seminar: Speech Pathology and Audiology.
- 590-1 to 4 (1 to 2 per semester) Readings in Speech Pathology and Audiology.
- 593-1 to 3 Research Problems in Speech Pathology and Audiology.
- 594-1 to 2 Clinical Practice: Voice Disorders.
- 595-1 to 2 Clinical Practice: Fluency Disorders.
- 596-1 to 2 Clinical Practice: Cerebral Palsy.
- 598-1 to 3 Internship in Speech Pathology and Audiology
- 599-1 to 6 Thesis.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

Technical Careers (School, Program, Courses)

The Bachelor of Science degree in the School of Technical Careers is designed for students who seek non-traditional education on the baccalaureate level.

The Bachelor of Science degree in the School of Technical Careers is particularly designed for the student who has entered an educational or career path for which there is no existing baccalaureate program. It accommodates those who have begun or completed associate degree occupational programs in any post-secondary institution, by allowing full transfer of credit; those who wish to turn military training into viable civilian credentials; and those with extensive occupational experience who wish to upgrade their educational status. Provision is made to recognize many forms of previous educational and occupational experience for credit toward the degree.

There is no single program or major leading to this degree. The only requirements are those minimums in General Studies and total hours for graduation set by the University.

This degree is designed for the student whose educational and career goals are not met in any other university program. It is totally flexible within the limits of University requirements previously described, and each program is individually designed and titled for each student. The student himself designs his program in consultation with advisers who may be university faculty members or laymen knowledgeable in the career field which the student has chosen.

Because these baccalaureate programs are completely individualized, there is no formal list of requirements applicable to all students. Persons interested in the Bachelor of Science degree in the School of Technical Careers should contact the Office of the Dean, School of Technical Careers, for additional information.

Courses

101-2 Business Correspondence. To equip the student for effective letter writing so that he can compose letters quickly, easily, and efficiently is a basic goal of this course. It will help the student form good habits that will facilitate adaptability in the business world. The student will strive to develop naturalness, courtesy, tact, honesty, and a positive attitude in the construction and use of business correspondence. Lecture and individualized instruction two hours.

102-2 Technical Writing. To successfully complete this course, the student should be proficient in particular writing techniques (technical description, definition,

classification, abstracting, etc.) and follow through a library research project in his own technical field. Lecture two hours and individualized instruction.

103-2 Fundamentals of Mathematics. This course is pre-technical level intended for those who have had no high school algebra or whose scores on the School of Technical Careers Mathematics Placement Test indicate a need for it. The course will enable the student to perform the fundamental operations with integers, common fractions, and decimals; to solve problems involving ratio, proportion, and percent; to use measurement concepts and geometric formulas to compute areas, volumes, and perimeters; and to perform basic algebraic operations. Semi-programmed instruction. Four hours per week.

104-2 Business Mathematics. Upon successful completion of this course, the student should be able to perform a wide range of business procedures for which mathematics is required and have the mathematical skills needed by a student preparing to enter business employment. The topics include percent, taxes, insurance, depreciation and overhead, interest, and retail mathematics. Lecture-discussion two hours.

105-4 (2, 2) Technical Mathematics. Will enable the student to (a) perform basic calculations with the slide rule, use algebraic equations and geometric formulas to solve technical problems, construct and interpret graphs from functional relationships and quantitative data and (b) solve problems using quadratic formulas, use logarithms in computations, and use trigonometric functions to solve vector problems and right triangle applications. Lecture-discussion four hours.

107-4 (2, 2) Applied Physics. Places emphasis on basic and applied physics at a level consistent with technical education objectives. The student will learn laws and principles, solve problems, and perform experiments pertaining to (a) mechanics and heat and (b) light and electricity. Lecture three hours. Laboratory two hours. Prerequisite: high school algebra or 103.

108-2 Chemistry of Fuels and Lubricants. The student will demonstrate his ability to analyze fuels and lubricants and detect impurities and contaminants. (Lecture two hours. Laboratory three hours. Eight weeks.)

115-5 (2, 3) Introduction to Chemistry. (a) Inorganic. The student will study the structure of matter, including a survey of common elements and compounds and the changes during chemical reactions. He will also study inorganic bases, salts, solutions, the periodic tables, equation balancing, and metric tables. (Lecture three hours. Laboratory two hours. Eight weeks.) (b) Biological. The student will study the chemistry of organic compounds, carbohydrates, proteins, and lipids relating them specifically to body functions. He will also study the chemistry of digestion, metabolism, respiration, blood enzymes, hormones, and vitamins. (Lecture four hours. Laboratory three hours. Eight weeks.) Must be taken in a,b sequence.

118-2 Applied Calculus. Upon successful completion of this course, the student will be able to find derivatives and integrals of algebraic expressions. He will use this working knowledge of calculus as a tool to solve technical problems in the mechanical, civil, and electrical-electronic fields; to converse intelligently with engineers and scientists who speak the language of calculus; and to read technical articles written in that language. Lecture-discussion two hours. Prerequisite: 105 or Mathematics 111.

141-3 Introduction to Physiology and Human Anatomy. The student will survey the functions and structures of the nine basic body systems: digestive, respiratory, skeletal, muscular, excretory, reproductive, endocrine, circulatory, and nervous. Lecture three hours.

153A-2 Oral Reporting. Successful completion of this course equips the student to construct and execute effective informative oral communications, recognize and use basic methods of logical organization, make a logical and coherent oral progress report, and take a more positive role in the world of business and industry. Lecture and individualized instruction, four hours per week. Eight weeks.

153B-2 Conference Methods. Upon successful completion of this course, the student will be able to identify and use basic problem solving methods, take a positive role in a typical business conference, and effectively manage the mechanics of dyadic and public oral communications within the typical business framework. Lecture, individualized instruction, and special projects, four hours per week. Eight weeks.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chairman.

200-2 Primary Flight Theory. Prepares the beginning aviation student for the FAA Private Pilot Written Examination. Consists of 48 classroom hours of instruction in aerodynamics, FAA regulations, primary navigation, use of computer, weather, and radio navigation.

201-2 Flight—Primary. Prepares the beginning student in flight to pass the practical

examination (flight test) for the Private Pilot Certificate. Consists of 45 hours of flight training, which includes 30 hours of flight instruction, five of which is in a simulator; and 15 hours of solo flight. Each training flight is also preceded by a briefing by the instructor and a post-flight critique. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

202-2 Flight—Basic and Intermediate Theory. Continuation of ground school above the primary level. Course consists of 32 hours of classroom instruction in Federal Aviation Regulations pertaining to operations relating to commercial flight, aerodynamics, safety, weather, and the safe operation of aircraft.

203-1 Flight—Basic. Beginning course in preparation for the Commercial Certificate. Course consists of 50 hours of flight training. Includes pre-flight briefing and post-flight critique by the flight instructor. Of the 50 hours, ten hours are dual flights and 40 hours are solo flights. Includes dual night flights and 20 hours of solo cross-country. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

204-1 Flight—Intermediate. Continuing preparation for the Commercial Certificate. Consists of 50 hours of flight training. Includes preflight and post-flight briefing by instructor. Includes ten hours of dual flight instruction in an airplane with retractable gear, flaps, and a controllable propeller, five hours of night flights, twenty hours of solo cross-country, and ten hours of solo practice on advanced maneuvers.

205-2 Flight—Instrument Theory. Course is directed to the theory of flight by instrument. Consists of thirty-two hours of classroom instruction in Federal Aviation Regulations pertaining to instrument flight, navigation by radio aids, aviation weather, and function, use, and limitations of instruments required for instrument flight.

206-2 Flight—Instrument and Advanced. This flight course will complete requirements for the Commercial Certificate, and will consist of 45 hours. Included in the 45 hours are 20 hours of instrument flight instruction in an airplane, 15 hours in an instrument simulator, five hours dual on flight maneuvers, and five hours of solo practice on maneuvers required to pass an FAA commercial flight test. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

207-1 Flight—Multi-Engine Operations. Prepares the student for the FAA Multi-Engine Rating (airplane). Includes ten hours of flight training in multi-engine aircraft; and ten hours of individual ground instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

210-4 (2, 2) Job Orientation and Analysis. (a) Special instructional sessions offered on personality, clothing, job application, and professional ethics. Preparation of a portfolio consisting of a personal data sheet, an analysis of prospective employing firms, sample letters of application, and an acceptance or refusal. Practice in being interviewed by representatives of business and industry. (b) Students will be required to discover their interests in career opportunities, to explore these fields, and to discover job opportunities in their interest areas. Lecture four hours. Need not be taken in sequence.

232-3 Labor-Management Problems. The student will gain a general understanding of the economic situation of which labor-management problems represent a sub-set. He will develop a perspective on the evolution of labor relations in the United States economy and on how the interaction of labor and management differs throughout the world. The collective bargaining section introduces the student to the techniques of bargaining used by labor and management in their ongoing interactions. Lecture three hours.

258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by departmental evaluation.

259-1 to 50 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chairman is required.

300-2 Flight-Instructor (Airplane). Prepares the commercial pilot for an FAA Flight Instructor Certificate. Includes 25 hours of dual flight training and 40 hours of specialized ground instruction. This course carries substantial charges which may change

from time to time. For exact changes contact the Air Institute and Service, Southern Illinois Airport.

301-1 Flight-Instructor (Airplane-Multi-Engine). This course consists of five hours of dual flight instruction and 15 hours of classroom instruction. Prepares the holder of a flight instructor certificate for the addition of the multi-engine flight instructor rating. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

302-1 Flight-Instructor (Airplane Instrument). Designed to prepare the flight instructor to teach instrument flying, and to acquire the Instrument Flight Rating. Course consists of ten hours of dual flight instruction and 25 hours of classroom instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

319-1 to 15 Occupational Internship. The student will be assigned to a university approved organization engaged in activities related to the student's academic program and career objectives. He will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 10 Work Study Internship. Provides work-study students with an opportunity to participate in an on-campus work experience related to their academic program and career objectives. Hours and credits are to be individually arranged. Mandatory Pass/Fail.

321-3 Seminar in Technical Careers. The purpose of this course is to allow those School of Technical Careers baccalaureate students who have had little or no experience within their chosen careers to become acquainted with the current state of the professions to which they aspire. The object is to help students prepare themselves for maximum competitiveness within the job market through awareness of existing job opportunities, knowledge of job requirements, and selection of course work appropriate to meet specifications of available positions.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. Prerequisite: consent of instructor.

400-1 Flight-Airline Transport Pilot. Prepares the commercial pilot for the FAA Airline Transport Pilot Certificate. Includes 40 hours of ground instruction and 20 hours of flight training in single-engine or multi-engine aircraft. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Not for graduate credit.

421-3 Preprofessional Seminar in Technical Careers. Introduces students to the various elements involved in obtaining a position in their chosen career field. Topics included are: personal inventories, placement services, employment agencies, interviewing techniques, resumes, letters of application, references, and employment tests. Each student will develop a portfolio including personal and professional information related to his career goals. Not for graduate credit. Prerequisite: enrollment in School of Technical Careers baccalaureate program or consent of instructor. Elective Pass/Fail.

Technology (Department)

Two degree programs are available in technology. One program leads to the Bachelor of Science degree with a major in engineering technology (see Engineering Technology) with specialization in one of three areas: civil engineering technology, electrical engineering technology, or mechanical engineering technology. The other program leads to the Bachelor of Science degree with a major in industrial technology (see Industrial Technology).

Engineering technology courses contain topics related to the design and development of products. Industrial technology courses contain topics related to the manufacture and distribution of products.

The present technological society has increased the demand for new types of personnel known as technologists. A technologist utilizes established methods to achieve improvements in existing designs and systems. Technologists should be knowledgeable in the state of the art of a particular technology, capable of

utilizing handbooks and other forms of codified information with skill and discrimination, and sufficiently versed in mathematics and science to recognize sound procedures.

The technology programs are flexible enough to provide the means whereby a graduate of a two-year occupational program can obtain a bachelor's degree in a minimum length of time. The industrial technology program provides credit to individuals for related work experience outside the institution.

The programs are designed to provide the necessary training for entry into employment upon the completion of the baccalaureate degree. Opportunities for advanced study are available in business-related fields or in education.

Theater (Department, Major, Courses)

The Department of Theater encompasses two roles. First, as an academic discipline, it seeks to expand the student's knowledge and understanding of drama and the theater while, at the same time, bringing together his broad range of knowledge and experience gained in all areas of study. Secondly, it is through the action involved in the production of public performances that the student's accumulated knowledge and skills are directed toward an artistic and tangible end.

The department provides instruction and training in all phases of dramatic production for the stage and in basic techniques for dramatic production in television, radio, and motion pictures.

Education for dramatic production entails training and practice in acting, directing, and technical production (stage management, crew work, the planning and execution of costumes, lighting, and scenery); understanding of the essential nature of theater art through study of theater aesthetics, history, and criticism; a survey of theater management practices; a study of the principles and techniques of playwriting; and a knowledge of dramatic literature.

The courses are designed to achieve the following objectives: (1) to teach the theory and practice of play production; (2) to provide a foundation for graduate study in dramatic production, theory, and history; (3) to provide basic professional training in all phases of dramatic production for stage, screen, radio, and television; (4) to provide the general college student with opportunities to participate on an extracurricular basis in a cooperative artistic enterprise, and with courses which will contribute to a broad liberal arts education; (5) to provide the student of general speech with training and experience in an important type of speech activity; (6) to provide campus, city, and area with live theater performances of the best plays, including children's plays and opera, of past and present; (7) to permit students some degree of specialization in any one of four areas of theater production: acting and directing; scenic/costume design and technical direction; playwriting and dramatic literature; and dance; and (8) to provide a foundation in theater history and theory.

The Southern Players, under the supervision of the Theater faculty, produce each year three full-length plays and a dance program, three plays for children, four faculty and student-directed full-length plays, and three programs of original one-acts. Each fall, the Touring Theater, a troupe composed of students registered in 322, tours Southern Illinois for several weeks, performing daily a full-length play for adults and a play for children. Each summer a resident stock company produces two plays and two musicals in the air-conditioned University Theater.

Bachelor of Science Degree, College of Communications and Fine Arts

The following requirements are established for four areas of specialization: acting-directing, design-technical, playwriting-dramatic literature, and dance. Each area of specialization has a core curriculum, common in the first three areas, a specialized curriculum, and a limited number of electives. Since the core curriculum for dance is somewhat different from that of the other three areas, it is listed separately.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Theater</i>	75
Theater Core Curriculum	42
GSC 203, 365	(5)
GSD 152	(2)
GSE: 4 hours from 103, 104, 113, or 114	(4)
English 460 or 465 or 468	3
Theater 211a,b,c, 207, 217, 311, 322, 354a,b, 402a, 308-10 (minimum of 2 hours in a,c, and d each)	39
Theater Specialization	33
Specialization requirements listed below.	
<i>Total</i>	120

THEATER MAJOR—ACTING-DIRECTING SPECIALIZATION

<i>Theater 203, 213, 305, 317a,b, 402b, 417</i>	15
<i>Theater Electives</i>	3
<i>Recommended electives from courses below</i>	15
Art 204, Speech 471 or 472, English 460 or 462 or 468 or 471 or 472, Cinema and Photography 350 or 351, Radio-Television 489, Philosophy 460	33

THEATER MAJOR—DESIGN-PRODUCTION SPECIALIZATION

<i>Theater 412a, 414, 432, 438</i>	10
<i>Electives from courses below</i>	8
Theater 305, 307, 318, 407, 412b, 415, 418, or from other departments with approval of adviser	
<i>Electives from courses below</i>	6
Interior Design 381, 382, Clothing and Textiles 320, 360.	
<i>Electives</i>	9
	33

THEATER MAJOR—PLAYWRITING-DRAMATIC LITERATURE SPECIALIZATION

<i>Two courses from English 460, 462, 464, 465</i>	6
<i>Psychology 305</i>	3
<i>Theater 411a,b, 438, 402b</i>	11
<i>Theater Electives</i>	6
<i>Electives</i>	7
	<hr/>
	33

THEATER MAJOR—DANCE SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Theater with Specialization in Dance</i>	58-67
Dance Core Curriculum	28-37
GSC 203, 365	(5)
GSD 152	(2)
GSE: 4 hours from 103, 104, 113, 114, or 115h	(4)
Theater 211a,b,c, 207, 217, 322 (1 to 10 hours), 354a,b, 402a, 308a,c,h (10 hours)	28-37
Dance Specialization	30
Theater (or physical education) 209, 213, 230A,B,C(4), 240A,B,C(4), 273a,b, 312, 313, 379, 416, plus 4 hours from any sequence of 230 or 240	
<i>Electives</i>	8-17
	<hr/>
<i>Total</i>	120

Minor

Required courses are Theater 207, 211a, 217, 311, 402a, 354a,b, (Total: 15) for students in the College of Communications and Fine Arts; GSC 203, Theater 211a, 217, 354a,b, 402a, 438 (Total: 15) for students in the College of Liberal Arts; GSC 203, Theater 230A,B, 240A,B, 309-2, 313, 312, 379, 416 (Total: 23) for students with a minor in theater with specialization in dance.

Courses

- 203-2 Voice and Diction.** Principles and practice in personal vocal and articulatory development and control. General group drills in phonation, resonance and vocal variety; drills for clarity and ease in articulation. For specific vocal needs; individual exercises, coaching, and critical comment; leading to increased effectiveness in formal reading and speaking situations. Elective Pass/Fail.
- 207-2 Fundamentals of Theatrical Design.** Graphic media and workshop exercises acquaint students with the problems encountered by the director, scene designer, cos-tumer, and lighting director in providing a suitable environment, by visual means, for the actor. Elective Pass/Fail.
- 209-1 Rhythmic Analysis.** (Same as Physical Education for Women 209.) The analysis of rhythm as related specifically to motor learning. Prerequisite: Physical Education for Women 115f, h.
- 211-6 (2,2,2) Staging Techniques.** An introductory course in the principles, proce-dures, and practice of theatrical production including experience in conjunction with

departmental presentations (a) Basic methods of construction and handling scenery. Lecture two hours, laboratory two hours plus crew assignments. (b) Basic techniques of handling stage lighting instruments and electricity. Lecture two hours, laboratory two hours plus crew assignments. (c) Basic techniques of constructing and handling stage costume. Lecture two hours, laboratory two hours plus crew assignments.

213-2 Stage Movement. (Same as Physical Education for Women 213.) Experiences in movement and improvisation for the performing artist.

217-2 Acting. The actor's instrument: jargon and geography of the stage, concentration/relaxation exercises, improvisation, play reading from the actor's point of view. Elective Pass/Fail.

230A-2 Beginning Techniques of Classical Ballet. (Same as Physical Education for Women 230A.) Basic ballet and introduction to centre work.

230B-2 Intermediate Techniques in Classical Ballet. (Same as Physical Education for Women 230B.) Intermediate level techniques with emphasis placed upon movement away from the barre, combination of basic steps to create a movement pattern, additional work done to strengthen the dancer's ability to turn, jump and leap. Prerequisite: 230A or consent of instructor.

230C-2 to 12 Advanced Techniques of Classical Ballet. (Same as Physical Education for Women 230C.) Advanced skill techniques with emphasis on pure classic alignment, focus upon individual technical weaknesses, coaching for musicality and the study of classic roles in ballet history. Prerequisite: 230B or consent of instructor.

240A-2 Beginning Techniques of Contemporary Dance. (Same as Physical Education for Women 240A.) Introduction to the basic concepts of dance as a root movement experience in all life. Emphasis placed on proper body alignment, proper mechanics of breath and phrasing, vocabulary and terminology of the art form, improvisation and creative movement.

240B-2 Intermediate Techniques of Contemporary Dance. (Same as Physical Education for Women 240B.) Emphasis placed on movement which is problematic to the individual, style as a thought within various contemporary techniques, work done to strengthen one's ability to turn, jump and leap. Prerequisite: 240A or consent of instructor.

240C-2 to 14 Advanced Techniques of Contemporary Dance. (Same as Physical Education for Women 240C.) Technical development, individual technique weakness, assignments for creative movement solutions to choreographic needs, development of a personal style of dance. Prerequisite: 240B or consent of instructor.

273-4 (2, 2) History of the Dance. (Same as Physical Education for Men and Women 273.) (a) The study of dance from primitive sources through the 19th century. (b) The study of dance as an art form in the 20th century.

305-2 Stage Make-up. Theory and technique of various types of make-ups. Supplies, at least \$10.00 per semester.

307-2 Drafting for the Theater. Development of the student's skill in scenographic techniques including ground plans, sections, elevations and detail construction drawings. Lecture two hours, laboratory one hour.

308-1 to 10 Dramatic Activities. Credit to be earned by participation in departmental productions. (a) Stagecraft, (b) Lighting, (c) Costuming, (d) Acting, (e) Make-up, (f) Business, (g) Directing, (h) Dance. Prerequisites: 211a,b,c for 308a,b,c; 217 for 308d; 305 for 308e; 404 for 308f; 402a for 308g.

309-4 (2,2) Methods of Teaching Dance. (See Physical Education for Women 309.)

311-2 Play Analysis and Introduction to Playwriting Practice. An analysis of the structure of such dramatic forms as the one-act play, the full-length play, the children's play, the television play, the radio play, etc. as it pertains to the dramatic writer and the theater practitioner. Conceptual elements are also considered in the representative works examined. Also included is a practical introduction to playwriting practice by means of preparing a short play from germinal idea to scenario. Prerequisite: one course in dramatic literature.

312-3 Dance Philosophies. (Same as Physical Education for Men and Physical Education for Women 312.)

313-3 Dance Composition. Introduction to choreography as an art form with special emphasis given to the uses of space, time, and energy. Prerequisite: Physical Education for Women 115h, 213.

317-4 (2, 2) Intermediate Acting. (a) Characterization. Physicalization of psychological elements; mask and movement exercises; observation exercises; intuitive adjustments to the suggestions of music, costume, props, words; continuation of play reading from the actor's point of view. (b) Preliminary scene study. Emphasis on American realism, application of techniques from 217 and 317. Must be taken in a,b sequence. Prerequisite: 217.

318-2 Advanced Stagecraft. Advanced study of the principles and procedures of scenery construction including complex construction problems, rigging and the construction of stage properties. Lecture two hours, laboratory one hour.

322-1 to 10 Practicum in Theater. Practical experience in acting, directing, and associated theater work in area tours and summer stock. Credit may be earned for the course both on tour and in stock.

354-4 (2, 2) History of the Theater. (a) Theater history from primitive times to the 17th Century in France. (b) Theater history from the 17th Century to the present. Representative plays are included in both courses.

374-1 Advanced Folk Dance. (See Physical Education for Women 374.)

379-2 Advanced Dance Composition. (Same as Physical Education—Men, Women 379.) Development of compositional skills, choreographic techniques for large groups, mastery of the solo dance form, and individual movement problems conceived, choreographed, and performed.

390-2 to 4 (2, 2) Reading in Theater Arts. Supervised and directed readings in areas of theater including dramatic literature. Prerequisite: theater major and consent of adviser and instructor.

391-2 to 4 (2, 2) Independent Study in Theater Arts. Independent work on selected problems in research or on creative projects. Prerequisite: theater major and consent of advisor and instructor.

402-6 (3, 3) Play Directing. (a) Introduction to the principles and procedures of play direction including play selection, interpretation, and patterning of auditory and visual stimuli. Extensive scene work in class-time workshops; direction of a full one-act play by the end of the semester. (b) The director as administrator, interpreter, critic, and artist. Study of theories and practice of directing non-proscenium productions. Students will direct two full one-act plays. Must be taken in a,b sequence except with consent of instructor.

404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, and accounting practices, direct sales, publicity, promotion, and public relations.

407-2 Sound in the Theater. Consideration of sound systems design and application of sound in dramatic production. Lecture and laboratory two hours. Prerequisite: 211b or consent of instructor.

409-3 High School Theater and Its Production Problems. Philosophy and analysis of basic needs of the high school theater. Consideration of all production elements with emphasis on play selection, casting, directing—artistic and technical.

410-2 Children's Theater. Study of methods and their practical application of introducing children to theater and theatrical productions as an art form. Recommended for education majors.

411A-3 Playwriting—The One-Act Play. Principles of dramatic construction and practice in the writing of two one-act plays. Problems of adaptation are treated. Individual conferences supplement the class discussion and analysis of student writing. Degrading plays have opportunity to be produced in the University Theater's Quarter-Night program for new plays. Prerequisite: one course in dramatic literature for non-majors and graduates; 311 for undergraduate theater and speech majors.

411B-3 Playwriting—The Full-Length Play. Principles of dramatic construction and practice in the writing of a full-length play (encompassing such varied types as the children's play, the historical pageant-drama, the outdoor epic-drama, the musical, etc.) In special cases, students may elect to write three short plays. Prerequisite: 411A or consent of instructor; none except 311 for theater and speech undergraduate majors. Elective Pass/Fail.

412-6 (3, 3) Stage Design. The design of settings for the stage and other dramatic media. Prerequisite: 207. Elective Pass/Fail.

414-3 Costume Design. History of western costume from Greek to Renaissance and its adaptation to stage use. Theory and principles of theatrical costuming. Application of principles of design and color. Designs for single scenes.

415-3 Costume Design. History of costume, Renaissance through 19th Century. Style, fantasy, and the comic in costume design. Principles of dramatic theory and criticism as applied to costume design. Evaluation of research tools. Methods and procedures in designing costumes for a complete show. Prerequisite: 414.

416-3 Current Theories and Practices in the Teaching of Dance. (See Physical Education for Men or for Women 416.)

417-2 Advanced Acting: Advanced Scene Study. Problems in style; scenes from children's plays, Shakespeare, restoration; the understanding and playing of more complicated subtexts as in Chekhov, Pinter, Beckett, et al; continued application of 217 and 317. Prerequisite: 217 and 317.

418-2 Technical Direction. Advanced course in the management of technical production. Emphasis is placed on scene shop organization, building materials, stage equipment, and the role of the technical director. Lecture two hours. Prerequisite: 211A or consent of instructor.

432-2 Stage Lighting. An in-depth investigation of stage lighting theory, design, and practice. Emphasis is placed on creative design projects for the varied dramatic styles and media. Lecture two hours. Laboratory one hour. Prerequisite: 211B or consent of instructor.

438-2 Contemporary Developments in the Theater. Critical study of theory and practice in acting, directing, production, and architecture in the modern theater. The rise and development of the film, radio, and television as dramatic media.

444-1 to 6 Contemporary Dance Workshop.

489-3 to 6 Theater-Television Workshop. (See Radio-Television 489.)

500-1 Introduction to Research Methods.

502-3 to 6 (3, 3) Advanced Directing.

503-2 to 6 (2 per topic per semester) Advanced Technical Problems.

504-3 The Comic Theater.

505-3 The Tragic Theater.

511-1 Playwriting Workshop.

517-2 to 6 (2, 2, 2) Graduate Practicum in Acting.

519-1 to 10 Theater Practicum.

526-2 to 8 (2 per topic) Seminar in Theater Arts.

530-1 to 3 Research Problems in Theater.

599-1 to 6 Thesis.

Thermal and Environmental Engineering (Department, Major [Engineering], Courses)

(SEE ENGINEERING)

Tool and Manufacturing Technology (Numerical Control) (Program, Major, Courses)

The graduate of Tool and Manufacturing Technology (Numerical Control) will have the technical background to assist engineers in research, development, and testing. He will also have skills in metal cutting enabling him to follow through on jobs requiring the abilities of a tool maker.

The tool and manufacturing curriculum is designed to accept students without previous experience in metal cutting. Those students entering with industrial experience, or special courses which were taken during military training, will be given course credit. Transfer students from community colleges will be accepted and given credit for course work where it is applicable.

Upon completion of the tool and manufacturing program, students readily obtain positions in the areas of engineering technicians testing components and materials, pilot model makers, tool and die work, mold making, foremen of numerical control production lines, programmers, and process planners. With additional on-the-job experience, many graduates of tool and manufacturing technology enter into supervisory positions.

The tool and manufacturing curriculum fits between the areas occupied by the mechanical and manufacturing engineer and the skilled toolmaker. It includes theory, procedures, techniques, and skills from each of these areas and falls approximately halfway between.

The student in this program will have the advantage of courses in data processing that will give him the ability to work with computer-assisted programming for numerical controlled machines.

He will learn to design and test industrial, hydraulic, and pneumatic power circuits; to read blueprints, design basic jigs and fixtures, make shop sketches,

and alter existing machines for structural changes; and to build basic progressive dies, draw dies, die casting dies, and plastic injection mold dies.

The graduate will have the technical background to work with engineers in research, development and testing, plus skills in metal cutting that will give him the abilities of a tool maker.

Students in tool and manufacturing technology should expect to spend about \$75.00 for instruments, tools, and supplies.

Representatives of industry serve on an advisory committee which helps to keep the program responsive to needs in the field. Current members are: G. H. Esch, General Metals Products Co., St. Louis, Missouri; David A. Bartz, Ferguson Machine Co., St. Louis, Missouri; J. B. Brown, Ferguson Fumigants, Hazelwood, Missouri; and William Wolff, vice president for manufacturing, Diagraph-Bradley Industries, Herrin.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Tool and Manufacturing Technology (Numerical Control)

GSD 101	3
GSB 202 or 212	3-4
Electronic Data Processing 208a,b	8
School of Technical Careers 105a,b, 107a,b, and 102 or 153a	10
Tool and Manufacturing Technology 101, 102, 125, 126, 128, 185, 186, 210, 211, 220, 221, 275, 276	54
<i>Total</i>	78-79

Courses

101-1 to 7 Basic Tool and Manufacturing Laboratory. The student will perform the basic operations covering the drill press, engine lathe, shaper, and basic bench work operations involving layout and hand tools. The operation of the shaper as a unit production machine is covered. Laboratory five to fifteen hours.

102-1 to 7 Milling Machine and Grinding Laboratory. The student will demonstrate his ability to set up and operate the various milling machines and grinding machines common to the tool room and manufacturing operations. Laboratory five to fifteen hours. Prerequisite: 101 or consent of instructor.

125-1 to 3 Introduction to Machine Tools. The student will demonstrate his knowledge of the basic machine tool operations; also, bench and hand tool techniques. Lecture one to three hours.

126-1 to 3 Machinability of Metals, Milling, and Abrasive Machining. The student will demonstrate his ability to select correct cutting speeds, feeds, and tool geometry for various alloy steels and to understand the relationship of the factors involved. He will be required to understand the various tool room and production milling machines and grinders; their construction, set-up, and operations. Lecture one to three hours. Prerequisite: 125 or consent of instructor.

128-2 Hydraulic and Pneumatic Controls. The student will be required to understand industrial fluid power and its application in industry. The student designs, tests, and implements hydraulic and pneumatic circuits that are applicable to industry. Lecture one hour. Laboratory two hours.

180-3 Welding I. The student will demonstrate his ability to apply the basic procedures in oxy-acetylene welding. Lecture one hour. Laboratory four hours.

181-3 Welding II. The student will demonstrate his ability to apply basic welding procedures in metallic arc welding. Lecture one hour. Laboratory four hours.

182-3 Welding III. The student will demonstrate his ability to apply basic welding procedures in T.I.G., M.I.G., and special welding and cutting applications. Lecture one hour. Laboratory four hours. Prerequisite: 181 or consent of instructor.

185-4 Technical Drawing I. Upon completion of this course, the student should be able to read and sketch pictorial and multiview drawings which include auxiliary views, sectional views, assemblies, weldments, up-to-date types of precision dimensioning, and many types of fasteners and machine elements. Lecture two hours. Laboratory three hours.

186-4 Technical Drawing II. Upon completion of this course the student should be able to read more complex drawings, use drawing instruments and geometric constructions where accuracy of layout is important, and design and draw simple jigs and fixtures. Lecture two hours. Laboratory three hours. Prerequisite: 185 or consent of instructor.

210-1 to 7 Numerical Control, Electrical Discharge Machining, and Tool and Die. The student will demonstrate his ability to set-up and operate the numerically controlled milling machine for production jobs; to set-up and operate the electrical discharge machine on die and mold making applications; and to build progressive compound and forming dies. Laboratory five to fifteen hours. Prerequisite: 102 or consent of instructor.

211-1 to 7 Advanced Numerical Control, Tool and Die, and Production Machining. The student will demonstrate his ability to set-up and operate advanced production jobs on the turret lathe, tracer lathe, and numerically controlled milling machines. He will build progressive dies and mold dies. Laboratory five to fifteen hours. Prerequisite: 210 or consent of instructor.

220-1 to 3 Numerical Control, Inspection Practices, and Electrical Discharge. The student will demonstrate his ability to program for typical industrial jobs using point to point programming, to understand the E.D.M. process and to select proper machine settings for a given application, and to understand inspection practices and precision measuring procedures. Lecture one to three hours. Prerequisite: 126 or consent of instructor.

221-1 to 3 Tool and Die, Production Machining, and Process Planning. The student will demonstrate his ability to process plan and run cost estimates on typical production jobs; to understand basic die design and components in relation to progressive compound and forming dies, and to understand production processes. Lecture one to three hours. Prerequisite: 220 or consent of instructor.

275-2 Ferrous Metallurgy. The student will demonstrate his understanding in the theory of alloys, characteristics of metals, simple phase diagrams and basic heat treating practices. Lecture two hours.

276-2 Tool Steel Metallurgy. The student will demonstrate his ability to apply heat treating procedures with tool steel common to industrial uses. He must also be able to select the proper steel for the design criteria. Lecture one hour. Laboratory two hours. Prerequisite: 275 or consent of instructor.

310-6 to 24 Certified Welder Training. A student may choose a concentrated area of work such as pipe welding, boilermaker welding, or structural steel welding. Upon completion of this course the student will pass the ASME code requirements in the welding area of his choice. He may choose any one or all of the following processes: oxyacetylene, metallic arc, tungsten inert gas, metallic inert gas, and cored wire welding. Through individualized instruction the student will progress at his own rate and may complete instruction at any time depending upon his individual progress. Certification papers will be completed by the School of Technical Careers and will be given to the student or forwarded to an employer. Prerequisite: completion of formal welding program or equivalent work experience.

Uncommon Languages (Minor)

(SEE LINGUISTICS)

University Studies (Program)

The University Studies program allows the eligible student to design a broad interdisciplinary program of study leading to a Bachelor of Science or Bachelor of Arts degree. The Bachelor of Arts degree is granted to the graduate who has completed at least one full year of foreign language on the college level; the Bachelor of Science degree is granted to the graduate who has not completed a year of foreign language.

In order to be formally admitted to work toward a degree in University Studies, the student must meet the following criteria:

1. The student must have fewer than 90 semester hours passed.
2. The student must have completed at least one full year of college course work—a minimum of 24 semester hours—with a 2.25 grade point average or higher. (For entering transfer students, the 2.25 must be for all college work previously completed; for continuing Southern Illinois University at Carbondale students, the 2.25 must be for all Southern Illinois University at Carbondale work.)
3. The student must not have exceeded any of the limitations prescribed by the program.
4. The student must have his individual program plan approved by the director of General Studies or his representative.

There are few specific requirements for the degree in University Studies other than those requirements which are university-wide baccalaureate requirements. However, there are limitations on the selection of coursework to insure that the student pursues a program commensurate with his ability and compatible to his educational goals and future aspirations.

Bachelor of Arts Degree, General Studies Division

<i>General Studies Requirements</i>	45 ¹
<i>Requirements for University Studies</i>	75
Foreign language	(4) + 4
300-400 level coursework	40 ¹
Electives as approved by the Dean of General Studies or his designated representative	31 ²
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<i>Total</i>	120

Bachelor of Science Degree, General Studies Division

<i>General Studies Requirements</i>	45 ¹
<i>Requirements for University Studies</i>	75
300-400 level coursework	40 ¹
Electives as approved by the Dean of General Studies or his designated representative	35 ²
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<i>Total</i>	120

¹The student must have a minimum grade point average of 2.00 for the 40 semester hours of 300-400 level coursework. General Studies courses at the 300-level count toward both the General Studies requirements and toward the requirement of 40 semester hours at the 300-400 level.

²There are two limitations placed on the electives:

a. The student may take no more than 40 semester hours in any academic unit *excluding* the basic 45 semester hours required in General Studies—with the exception of the College of Liberal Arts where he may take no more than 27 semester hours in the Social Sciences (excluding the nine semester hours required in Area B) and he may take no more than 27 semester hours in the Humanities (excluding the nine semester hours required in Area C and excluding English Composition).

b. The student may take no more than 20 semester hours in a department (or in a School within a College). General Studies courses are to be included in the total *except* for the basic 45 semester hours required.

In other words, *any* General Studies courses taken in addition to the minimum requirements are counted both toward the academic unit limits allowed and toward the department limits allowed.

University (Courses)

Courses

101-2 Comprehensive Learning Skills. Individual and group attention given to students in the reading, study, and interpersonal skills needed to cope in a college environment. Areas covered include speed reading, comprehension, vocabulary, theme writing,

study skills (time-scheduling, notetaking, test-taking, textbook reading, library usage, etc.) Enrollment limited.

258-1 to 30 Work Experience. For giving credit for work experience by students enrolled in the University Studies degree program. Such credit is sought by a petition to the director of General Studies who will submit the request to a faculty panel. Credit is granted upon recommendation of the panel and approval of the director of General Studies.

259-1 to 60 Occupational Education. A designation for credit granted for past occupational educational experiences related to students' educational objectives. Used only when specific program credit cannot be granted and is usable for elective credit only.

388-1 to 18 (1 to 9 per semester) International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of nine semester hours per semester and may be repeated for a maximum of 18 semester hours. Prerequisite: major department or program approval.

Zoology (Department, Major, Courses)

A major in zoology is an appropriate beginning for those planning a career that includes teaching and research in zoology, conservation, fisheries management and wildlife management, environmental monitoring, or the practice of medicine, dentistry, and veterinary science.

Students majoring in zoology are required to develop an individualized curriculum by consulting with the director of undergraduate studies in zoology and an appropriate faculty member of the department. The curriculum must include: a year of chemistry or physics, one course in mathematics beyond the College of Science requirement or a course in computer science, Biology 305 and 307, Zoology 120a,b, 300 (or equivalent, i.e., Biology 309), Zoology 482, and at least 18 additional semester hours of electives in zoology.

Courses offered in the General Studies program will not be accepted as electives. A minimum of 37 semester hours of biology and zoology must be completed for the major.

Bachelor of Arts or Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	11
English Composition	(3)
Writing Course (Technical Writing preferred)	(2)
Speech or other oral communication	(2)
Foreign Languages	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Physical Science (Not General Studies)	6 ²
<i>Requirements for Major in Zoology</i>	40-44 ³
Biology 305, 307	6
Zoology 120a,b 300 (or its equivalent), 482	13
Elective zoology courses	18
Chemistry or Physics (Not General Studies)	(6) + 0-2 ⁴
A course in Mathematics (beyond Mathematics 110a,b or 111), or in Computer Science	3-5
<i>Electives</i>	20-24
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

²May apply toward General Studies if approved substitutes are taken.

³Zoology requirements will satisfy biological science requirement for the College of Science.

⁴Satisfies physical science requirements for the College of Science.

Bachelor of Science Degree, College of Education

Degrees taken in the College of Education must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for the major in zoology are the same in both colleges. College of Education professional education and other certification requirements may be found in the section of this catalog titled Secondary Education. See Teacher Education Program, page 68.

Minor

A minor in zoology consists of 20 hours, including 120a,b and 482. Electives from zoology and the following areas may be used to complete the 20-hour minimum requirement: Biology 305, 306, 307, and 309; but no General Studies courses can be included.

Courses

118-3 General Zoology. For students with a weak background in biology and non-zoology majors who desire a general knowledge of animal life. An introduction to the basic concepts of animal life from molecular to community level, including the elements of cellular structure and function, reproduction, development, hereditary transmission, evolutionary processes, and Man's position in the animal kingdom. Two lectures and one two-hour laboratory per week. Cost of \$5.00 may be incurred by student.

120-8 (4, 4) Introduction to Invertebrate and Vertebrate Zoology. Diversity and its taxonomic treatment in animals, emphasizing structure, function, life cycles, and evolution. (a) Invertebrates, (b) Vertebrates. Two lectures and two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Need not be taken in a,b, sequence. Prerequisite: high school biology or 118 or GSA 115.

212-2 Birding. Bird watching for pleasure. Consideration of identification, songs and ecology of birds, information on bird organizations, equipment, and techniques. For non-zoology majors. Two lectures per week. Cost of \$5 to \$10 may be incurred by student.

258-2 to 4 Work Experience. Practical experience directly related to a person's specialty in the field of zoology. Student must petition the department for credit approval prior to beginning work. A work plan must be filed with the faculty adviser prior to commencing work program. Not acceptable for credit toward a major in zoology. Minimum grade point average of 2.5 is required. Mandatory Pass/Fail.

300-4 Vertebrate Embryology. Main features of embryonic and fetal development from fish to man. Two lectures and two two-hour laboratories per week. Cost of \$10.00 may be incurred by student. Prerequisite: 120b.

305-2 Genetics Laboratory. Experimental methods in applying basic principles of genetics. Monogenic and digenic inheritance, sex-linkage, gene interaction, linkage and chromosome mapping; mutation, artificial and natural selection, gene frequencies, and genetic drift. Two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Prerequisite: Biology 305, or concurrent enrollment.

309-3 Elementary Cell Biology. Introduction to structure, function, and natural history of major cell types. Two lectures and one two-hour laboratory per week. Cost of \$5.00 may be incurred by students. Prerequisite: consent of instructor.

316-4 (2, 2) Insect Pests and Their Control. (a) Classical entomology including morphology, physiology, and taxonomy. Two lectures per week. (b) Economic entomology — principal injurious insects including life history, damage, and control. Two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Credit may not be used toward a major in zoology. Must be taken in a,b sequence. Prerequisite: GSA 115 or equivalent.

318-5 Comparative Vertebrate Anatomy. The structure of vertebrate organ systems. Two lectures and three two-hour laboratories per week. Cost of \$5.00 to \$15.00 may be incurred by student. Prerequisite: 120b.

351-4 Ecological Methods. Basic ecological field techniques for analysis of community structure and functional relationships. Two four-hour laboratories. Cost of field trips may be \$5.00 to \$25.00 per student. Prerequisite: 120a, b and Biology 307.

375-2 Ecology of Surface Mining. Environmental characteristics, techniques of evaluating, plans for utilization and reclamation of surface mined areas. One lecture and one laboratory including field trips. Not acceptable for credit toward a major in zoology. Cost of \$5 to \$10 may be incurred by student.

393-1 to 3 Individual Research. Research on zoological problems. Credit may not be used toward a minor in zoology. Some cost may be borne by the student. Prerequisite: 3.00 GPA, senior standing, and approval by the department or faculty.

402-3 Natural History of Invertebrates. Introduction to ecology, social behavior, symbiotic, and predator-prey relationships of invertebrate animals. Laboratory in techniques of collecting, preserving, culturing, and identifying invertebrates. Recommended especially for high school and junior college teachers, and majors in sciences other than zoology. One lecture and two two-hour laboratories per week. Cost of \$10 may be incurred by student.

403-3 Natural History of Vertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Cost of \$10.00 may be incurred by student. One lecture and one four-hour laboratory. Prerequisite: 120b.

406-3 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods of culturing and studying. One lecture and two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Prerequisite: 120a.

407-4 Parasitology. Identification, morphology, and life histories of protozoans, helminths and arthropods parasitic on animals and a consideration of control measures and techniques for study of such parasites. Two lectures and two two-hour laboratories per week. Cost of \$5 may be incurred by student. Prerequisite: 120a.

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Prerequisite: 120b.

409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis on mammalian material. Two lectures and two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Prerequisite: 10 semester hours of biological science including vertebrate biology.

410-6 (3, 3) Vertebrate Paleontology. History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. (a) Fossil fishes, amphibians, reptiles, and birds. (b) Fossil mammals. Two lectures and one two-hour laboratory. Cost of \$5.00 may be incurred by student. Prerequisite: 120b.

413-6 (3, 3) The Invertebrates. (a) Structure, phylogeny, and habitats of the lower invertebrates, through lophophorates and lower deuterostomes. (b) Structure, phylogeny, and habitats of the higher invertebrates: higher deuterostomes, and protostomes, inclusive of arthropods. Cost of \$5.00 may be incurred by student. Three two-hour laboratories per week. Prerequisite: 120a.

414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution, and habitats of the North American freshwater invertebrate fauna. One lecture, one two-hour laboratory and one four-hour laboratory per week. Cost of \$10.00 may be incurred by student. Prerequisite: 120a.

415-3 Limnology. Lakes and inland waters, the organisms living in them, and the factors affecting these organisms. Two lectures and one four-hour laboratory alternate weeks. Cost of \$15.00 may be incurred by student. Prerequisite: 120a.

421-4 Histological Techniques. Student will study methods of preparing material for microscopic study and theories of staining and histochemistry behind these methods. One lecture and two three-hour laboratories per week. Cost of \$10.00 may be incurred by student. Prerequisite: 10 semester hours of a biological science.

426-3 Comparative Endocrinology. (Same as Physiology 426.) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Includes ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one two-hour laboratory per week. Cost of \$5.00 may be incurred by student. Prerequisite: consent of instructor.

441-3 Emergence of Order in Biological Systems. From the molecular to any desired higher level of biological organization: systemic, cybernetic, evolutionary, and thermodynamic principles. Two lectures and one two-hour laboratory per week. Cost of \$5.00 may be incurred by student. Prerequisite: consent of instructor.

459-3 Game Birds. Identification, life history, ecology, and management. Cost of field trips up to \$15.00 per student. One lecture and one four-hour laboratory per week, three or four of which will be Saturday laboratories. Prerequisite: 120b.

461-3 Mammalogy. Taxonomic groups, identification, and natural history of mammals. One hour lecture and two two-hour laboratories per week. Cost of \$5.00 may be incurred by student. Prerequisite: 120b.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one two-hour laboratory per week. Cost of \$5.00 may be incurred by student. Prerequisite: 120b.

466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations and management of marine fish stocks. Cost of field trip up to \$15.00 per student may be incurred. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: 10 hours of biological science and consent of instructor.

467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. Cost of field trips may be up to \$15.00 per

student. One lecture and two two-hour laboratories per week. Prerequisite: 120b.

468-4 (2, 2) Wildlife Biology. Basic concepts and techniques employed in managing wildlife populations and their associated ecosystems. A basic ecology course is desirable as background for this course. (a) Principles. Two one-hour lectures per week. (b) Techniques. Two two-hour laboratory sessions per week, three or four of which will be field trips on Saturdays. Cost of field trips up to \$15.00 per student may be incurred. Prerequisite: 10 semester hours of biological science; plus for zoology majors, concurrent enrollment in 468b.

471-3 Entomology. Structure, classification, and life histories of insects. One lecture and two two-hour laboratories per week. Cost up to \$10.00 may be incurred by student. Prerequisite: 120a.

473-3 Aquatic Entomology. Structure, classification, and biology of aquatic insects. One lecture and two two-hour laboratories per week. Cost up to \$10 may be incurred by student. Prerequisite: 120a.

479-3 Animal Behavior. The biological basis for the actions and interactions of animals. Two lectures and one two-hour laboratory per week. Cost of \$10.00 may be incurred by student. Prerequisite: GSA 209 or consent of instructor.

482-1 Zoology Seminar for Seniors. Classical and contemporary topics in zoology. This requirement will normally be met by participating in the regular meeting of the seminar. In lieu of seminar attendance and with consent of departmental chairman, the student may elect to prepare and give an oral presentation at a special seminar on an agreed upon research topic. One meeting per week. Not for graduate credit. Prerequisite: senior standing or 24 hours of life science completed. Mandatory Pass/Fail.

496-2 to 4 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and/or with methods of field study, collection, and preservation. Cost per individual will be approximately \$25.00 per week. Prerequisite: consent of graduate committee.

508-2 Helminthology.

512-2 Animal Geography.

514-3 Advanced Entomology.

520-3 Advanced Invertebrates.

521-3 Advanced Limnology.

525-3 Cytology. (Same as Botany 525.)

540-3 Factors in Animal Reproduction.

542-3 Osteology.

561-3 Game Mammals.

566-3 Fish Culture.

573-3 Physiological Ecology.

577-2 Population Ecology.

578-2 Population Genetics.

580-3 Advanced Taxonomy.

581-2 Zoological Literature.

582-1 to 4 (1, 1, 1, 1) Graduate Zoology Seminars.

583-1 Teaching Zoology in College.

585-24 (3, 3, 3, 3, 3, 3, 3, 3) Seminar.

593-1 to 8 Individual Research.

599-1 to 8 Research and Thesis.

600-1 to 32 Research and Dissertation.

5 Faculty

Accountancy (College of Business and Administration)

BARRON, MARY NOEL, Associate Professor, C.P.A., M.B.A., University of Michigan, 1946; 1948.
BOOKER, JON A., Assistant Professor, C.P.A., Ph.D., North Texas University, 1971; 1971.
BURGER, CLIFFORD R., Professor, C.P.A., M.S., Indiana State University, 1947; 1958.
ERIKSEN, DOUGLAS C., Associate Professor, C.P.A., C.M.A., Ph.D., University of Missouri, 1968; 1969.
GALLEGLY, ROBERT L., Associate Professor, *Emeritus*, A.M., University of Illinois, 1947; 1946.
GLICK, JOHN R., Instructor, M.S., University of Alabama, 1953; 1974.
OGDEN, SUSIE, Associate Professor, *Emerita*, A.M., University of Illinois, 1931, 1931.
ROZANSKI, EUGENE, Instructor, C.P.A., M.S., St. Louis University, 1968; 1972.
SCHMIDLEIN, EDWARD J., JR., Professor, C.P.A., Ph.D., New York University, 1953; 1959.
SETH, SHIRISH B., Associate Professor, Ph.D., Michigan State University, 1969; 1968.
SWICK, RALPH D., Professor and *Chairman*, C.P.A., D.B.A., Indiana University, 1954; 1955.
TUCKER, MARVIN W., Associate Professor, Ph.D., University of Alabama, 1966; 1966.
VANMETER, GARY L., Instructor, C.P.A., M.B.A., Southern Illinois University, 1971; 1971.
WOELFEL, CHARLES J., Professor, C.P.A., Ph.D., University of Texas, 1957; 1969.
WRIGHT, ROLAND M., Professor, C.P.A., Ph.D., University of Iowa, 1962; 1966.

Administrative Sciences (College of Business and Administration)

BATEMAN, DAVID N., Assistant Professor, Ph.D., Southern Illinois University, 1970; 1965.
BEDWELL, R. RALPH, Associate Professor, Ph.D., Southern Illinois University, 1969; 1954.
BUSSOM, ROBERT S., Assistant Professor and *Chairman*, Ph.D., Ohio State University, 1973; 1969.
FOHR, JOHN M., Professor, Ed.D., Michigan State University, 1959; 1962.
HUNT, JAMES G., Professor, Ph.D., University of Illinois, 1966; 1966.
LARSON, LARS L., Assistant Professor, Ph.D., University of Illinois, 1971; 1971.
MATTHEISS, T. H., Associate Professor, D.B.A., University of Maryland, 1970; 1973.
ORESCANIN, DANILO, Professor, D.B.A., Indiana University, 1960; 1972.
REHN, HENRY J., Professor, *Emeritus*, Ph.D., University of Chicago, 1930; 1945.
SCOTT, JOHN W., Professor, *Emeritus*, Ph.D., University of Chicago, 1930; 1947.
SHERMAN, A. KIMBROUGH, Assistant Professor, Ph.D., University of Maryland, 1972; 1969.
VICARS, WILLIAM M., Assistant Professor, Ph.D., Southern Illinois University, 1969; 1968.
WESTBERG, WILLIAM C., Professor, Ph.D., Pennsylvania State University, 1948; 1952.
WILSON, HAROLD K., Assistant Professor, D.B.A., University of Colorado, 1972; 1972.

Aerospace Studies

- BOYER, DALE ALAN, Adjunct Instructor; 1971.
 COTTON, ALISON D., Adjunct Assistant Professor, M.B.A., Golden Gate University, 1972; 1974.
 FENN, JAMES R., Adjunct Professor and *Chairman*, M.S., University of North Dakota, 1967; 1972.
 REEVES, THOMAS D., Adjunct Instructor; 1972.
 RESS, ROBERT F., Adjunct Assistant Professor, M.S., Indiana University, 1968; 1973.
 RUPH, MORGAN S., Adjunct Instructor; 1973.
 SCHROEDER, RALPH F., II, Adjunct Assistant Professor, M.S., Midwestern University, 1967; 1973.

Agricultural Industries (School of Agriculture)

- BENTON, RALPH A., Professor, *Emeritus*, Ph.D., University of Illinois, 1955; 1956.
 CUSUMANO, VINCENT, Assistant Professor, Ph.D., University of Kentucky, 1974; 1974.
 DOERR, WILLIAM A., Assistant Professor, Ph.D., Southern Illinois University, 1973; 1965.
 HERR, WILLIAM MCD., Professor, Ph.D., Cornell University, 1954; 1957.
 HOERNER, HARRY J., Assistant Professor, Ed.D., Oklahoma State University, 1969; 1972.
 KEEPPER, WENDELL E., Professor, *Emeritus*, Ph.D., Cornell University, 1938; 1950.
 LANGFORD, GORDON L., Associate Professor, Ph.D., Montana State University, 1969; 1969.
 LYBECKER, DONALD W., Assistant Professor, Ph.D., Iowa State University, 1970; 1970.
 PATERSON, JOHN J., Associate Professor, M.S., University of Saskatchewan, 1943; 1957.
 SOLVERSON, LYLE, Associate Professor, Ph.D., University of Wisconsin, 1967; 1966.
 STITT, THOMAS R., Professor, Ph.D., Ohio State University, 1967; 1967.
 WELTON, RICHARD F., Assistant Professor, Ph.D., Ohio State University, 1971; 1971.
 WILLS, WALTER J., Professor, Ph.D., University of Illinois, 1952; 1956.
 WOLFF, ROBERT L., Assistant Professor, Ph.D., Louisiana State University, 1971; 1972.
 WOOD, EUGENE S., Professor and *Chairman*, Ed.D., University of Missouri, 1958, 1949.

Allied Health and Public Services (School of Technical Careers)

- BUSHEE, ELEANOR J., Professor and *Chairman*, Dental Hygiene, D.D.S., Northwestern University, 1948; 1963.
 BYKOWSKI, PETER, Instructor, Dental Laboratory Technology; 1961.
 COUNSELL, LEE, Associate Professor, Dental Hygiene and Dental Laboratory Technology, D.D.S., Northwestern University, 1948; 1974.
 DAKIN, JOSEPH, Assistant Professor, Correctional Services and Law Enforcement, B.S., Michigan State University, 1966; 1974.
 GREENE, BARBARA, Assistant Instructor, Physical Therapist Assistant, B.A., Stanford University, 1952; 1972.
 HEES, ALICE JANE, Assistant Professor, Nursing, M.S., University of Colorado, 1960; 1974.
 HERTZ, DONALD G., Associate Professor, Mortuary Science and Funeral Service, Ed.M., University of Oklahoma, 1953; 1965.
 HOPPE, MARILYN JUNE, Instructor, Dental Hygiene, B.S., Southern Illinois University, 1972; 1972.
 IJAMS, KAYLEONNE, Instructor, Dental Laboratory Technology, B.S., Southern Illinois University, 1973; 1973.
 LAAKE, DENNIS, Instructor, Dental Laboratory Technology, M.S.Ed., Southern Illinois University, 1973; 1969.
 LEEBENS, WILLIAM M., Associate Professor, *Emeritus*, Dental Laboratory Technology, D.D.S., University of Minnesota, 1938; 1966.
 LIPP, CAROL, Instructor, Dental Hygiene, B.S., University of Michigan, 1963; 1969.
 MAYNE, JOSEPH, Instructor, Mortuary Science and Funeral Service, B.S., University of Minnesota, 1972; 1974.
 McCLOSKEY, FLORENCE, Assistant Professor, Dental Hygiene, B.S.Ed., Indiana University, 1973; 1973.
 OKITA, TED Y., Assistant Professor, Physical Therapist Assistant, M.A., Northwestern University, 1964; 1965.

- POSTON, GEORGE HUGH, Instructor, Mortuary Science and Funeral Service, B.A., McKendree College, 1969; 1974.
- SHIN, WANGSHIK, Assistant Professor, Social Studies, M.A., Southern Illinois University, 1963; 1967.
- TENNYSON, DANIEL, Instructor, Dental Laboratory Technology, A.T., Southern Illinois University, 1971; 1974.
- WALLACE, MELVIN, Assistant Professor, Correctional Services and Law Enforcement, M.S.W., Adelphi University, 1968; 1970.
- WEBB, LINDA, Instructor, Dental Hygiene, B.S., Southern Illinois University, 1974; 1974.
- WOLAVER, JO ELLEN, Instructor, Dental Hygiene, B.S., Southern Illinois University, 1973; 1972.

Animal Industries (School of Agriculture)

- GOODMAN, BILL, L., Professor, Ph.D., Ohio State University, 1959; 1958.
- HAUSLER, CARL L., Assistant Professor, Ph.D., Purdue University, 1970; 1970.
- HINNERS, SCOTT W., Professor, Ph.D., University of Illinois, 1958; 1951.
- HODSON, HAROLD H., JR., Associate Professor and *Chairman*, Ph.D., Iowa State University, 1965; 1971.
- KAMMLADE, W. G., JR., Associate Professor, Ph.D., University of Illinois, 1951; 1954.
- KROENING, GILBERT H., Professor, Ph.D., Cornell University, 1965; 1969.
- LEE, D. DIXON, JR., Associate Professor, Ph.D., North Carolina State University, 1970; 1970.
- MALES, JAMES R., Assistant Professor, Ph.D., Ohio State University, 1973; 1974.
- OLSON, HOWARD H., Professor, Ph.D., University of Minnesota, 1952; 1954.
- REED, ALEX, Professor, *Emeritus*, Ph.D., University of Illinois, 1953; 1946.
- STRACK, LOUIS E., Associate Professor, D.V.M., University of Illinois, 1961; 1968.
- WARING, GEORGE H., Associate Professor, Ph.D., Colorado State University, 1966; 1966.

Anthropology (College of Liberal Arts)

- ALTSCHULER, MILTON, Associate Professor, Ph.D., University of Minnesota, 1964; 1966.
- BENDER, M. LIONEL, Assistant Professor, Ph.D., University of Texas at Austin, 1968; 1971.
- COOK, EDWIN A., Associate Professor, Ph.D., Yale University, 1967; 1971.
- DARK, PHILIP J. C., Professor, Ph.D., Yale University, 1954; 1960.
- GERBRANDS, ADRIANUS A., Adjunct Professor, Ph.D., National University, Netherlands, 1956; 1965.
- GUMERMAN, GEORGE J., Associate Professor and *Chairman*, Ph.D., University of Arizona, 1969; 1973.
- HANDLER, JEROME S., Professor, Ph.D., Brandeis University, 1965; 1962.
- KELLEY, J. CHARLES, Professor, Ph.D., Harvard University, 1948; 1950.
- MacLACHLAN, BRUCE B., Associate Professor, Ph.D., University of Chicago, 1962; 1964.
- MARING, ESTER G., Assistant Professor, Ph.D., Indiana University, 1969; 1965.
- MARING, JOEL M., Associate Professor, Ph.D., Indiana University, 1967; 1963.
- MULLER, JON D., Associate Professor, Ph.D., Harvard University, 1967; 1966.
- RANDS, ROBERT L., Professor, Ph.D., Columbia University, 1952; 1966.
- RILEY, CARROLL L., Professor, Ph.D., University of New Mexico, 1952; 1955.
- SPECHT, JIM RICHARD, Adjunct Assistant Professor, Ph.D., Australian National University, 1970; 1970.
- TAYLOR, WALTER W., Professor, *Emeritus*, Ph.D., Harvard University, 1943; 1958.
- TYZZER, ROBERT N. III, Assistant Professor, Ph.D., University of Colorado, 1974; 1972.

Applied Technologies (School of Technical Careers)

- ALBERT, JOSEPH J., Instructor, Automotive Technology, B.S., Southern Illinois University, 1971; 1973.
- BASSETT, FRANKLIN A., Assistant Professor, *Emeritus*, Construction Technology, B.S., University of Illinois, 1948; 1964.
- BEAUCHAMP, CLARENCE, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, Stout, 1949; 1961.
- BESCH, GEORGE H., Lecturer, Construction Technology; 1974.
- BLEYER, DOROTHY, Assistant Professor, Mathematics and Science, M.S.Ed., Southern Illinois University, 1961; 1959.

- BRELIG, GEORGE A., Instructor, Architectural Technology, B.Arch., Kansas State University, 1970; 1974.
- CALDWELL, PAUL N., Associate Professor, Electronics Technology, M.S.Ed., Southern Illinois University, 1965; 1960.
- CASH, JOE R., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1970; 1972.
- COLLINS, JASON J., Assistant Professor, *Emeritus*, Mathematics and Science, M.S.Ed., Southern Illinois University, 1950; 1956.
- CRENSHAW, J. HOWARD, Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940; 1958.
- DALLMAN, MURNICE, Associate Professor and *Chairman*, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1960; 1954.
- DUNCAN, ROBERT IRVIN, Assistant Professor, Architectural Technology, M.Arch., Iowa State University, 1968; 1974.
- GREEN, CHARLES M., Assistant Professor, Electronics Technology, M.S., Illinois State University, 1951; 1957.
- HARBERT, DONALD L., Assistant Professor, Architectural Technology, Ed.D., University of Florida, 1968; 1973.
- HARBISON, JAMES L., Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940; 1957.
- HARRE, PAUL A., Instructor, Electronics Technology, M.S.Ed., Southern Illinois University, 1974; 1972.
- HOYLE, ORVILLE GLENN, Instructor, *Emeritus*, Tool and Manufacturing Technology, B.Ed., Western Illinois University, 1931; 1957.
- ICENOGLE, DALE F., Assistant Professor, Electronics Technology, B.S., University of Minnesota, 1970; 1971.
- KAZDA, JOSEPH G., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1965; 1967.
- LACH, NORMAN, Instructor, Architectural Technology, M.Arch., University of Illinois, 1974; 1974.
- LACKEY, John E., Assistant Professor, Electronics Technology, M.S., University of Southern Mississippi, 1974; 1974.
- LADNER, JOEL BROOKS, Instructor, Architectural Technology, B.Arch., University of Houston, 1966; 1971.
- LAMPMAN, DUNCAN, Assistant Professor, Tool and Manufacturing Technology and Construction Technology, M.S.Ed., Southern Illinois University, 1956; 1954.
- LETE, JOSEPH R., Assistant Professor, Architectural Technology, B.S., University of Illinois, 1951; 1961.
- LITTLE, HAROLD E., Assistant Professor, Architectural Technology, B.S., Pennsylvania State University, 1951; 1964.
- McDONALD, JAMES H., Instructor, *Emeritus*, Automotive Technology, B.S.Ed., Central Missouri State University, 1948; 1955.
- MUHICH, FRANK W., Assistant Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1957; 1952.
- OSBORN, HAROLD W., Assistant Professor, Construction Technology, M.S.Ed., Southern Illinois University, 1960; 1955.
- PALMER, MARIE, Instructor, *Emerita*, English, M.A., Columbia University Teachers College, 1940; 1968.
- PRATT, ARDEN L., Professor, Ed.D., State University of New York at Buffalo, 1968; 1971.
- RAY, O. B., Instructor, *Emeritus*, Automotive Technology, B.S., Murray State University, 1934; 1953.
- ROMACK, CHARLES, Instructor, Automotive Technology, B.S., Southern Illinois University, 1965; 1968.
- RUNKLE, LEWIS C., Assistant Professor, *Emeritus*, Automotive Technology, M.E., Colorado State University, 1962; 1962.
- RUTLEDGE, CLIFTON D., Assistant Professor, Architectural Technology, M.Arch., Kansas State University, 1968; 1965.
- SCHULTZ, RAYMOND, Assistant Professor, *Emeritus*, Electronics Technology; 1952.
- SIMON, ERNEST J., Professor, *Emeritus*, M.S., University of Illinois, 1936; 1950.
- SMITH, DONALD RAY, Assistant Professor, Mathematics and Science, M.S.Ed., Southern Illinois University, 1967; 1967.
- SODERSTROM, HARRY R., Professor, Tool and Manufacturing Technology, M.S., Bradley University, 1952; 1962.
- STALEY, GLENN LAMB, Instructor, Construction Technology, B.S., University of Missouri, Rolla, 1944; 1969.
- TRAYLOR, GEORGE LELON, Associate Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1965; 1957.

- TREGONING, PHILIP, Assistant Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1973; 1965.
- TROTTER, GENE E., Associate Professor, Architectural Technology, B.S., North Dakota State University, 1939; 1962.
- WHITE, JAMES E., Assistant Professor, Automotive Technology, B.S., Southern Illinois University, 1961; 1961.
- WILLEY, LUCIAN D., Associate Professor, Automotive Technology, B.Ed., Western Illinois University, 1936; 1953.

Art (College of Communications and Fine Arts)

- ABRAHAMSON, ROY E., Associate Professor, Ed.D., Columbia University, 1965; 1965.
- ADDINGTON, ALDON M., Assistant Professor, M.F.A., Cranbrook Academy of Art, 1966, 1967.
- BARONE, VIOLET TROVILLION, Assistant Professor, *Emerita*, M.A., George Peabody College for Teachers, 1955; 1964.
- BEENE, PATRICIA C., Instructor, M.S.Ed., Southern Illinois University, 1974; 1974.
- BERNSTEIN, LAWRENCE A., Associate Professor, M.F.A., Cranbrook Academy of Art, 1953; 1962.
- BETAUDIER, PATRICK C., Associate Professor, Nat. Diploma, St. Martins College of Art-London, 1957; 1969.
- BOYSEN, BILL H., Associate Professor, M.F.A., University of Wisconsin, 1966; 1966.
- FELDMAN, JOEL B., Assistant Professor, M.F.A., Indiana University, 1967; 1973.
- FINK, HERBERT L., Professor, M.F.A., Yale University, 1958; 1961.
- GREENFIELD, SYLVIA R., Assistant Professor, M.F.A., University of Colorado, 1967; 1968.
- JEFFRIES, LUCY B., Assistant Professor, M.F.A., University of North Carolina, 1959; 1973.
- JOHNSON, EVERT A., Lecturer, M.A., University of Iowa, 1954; 1966.
- KINGTON, L. BRENT, Professor, M.F.A., Cranbrook Academy of Art, 1961; 1961.
- KRAUSE, BONNIE J., Instructor, M.S., Southern Illinois University, 1968; 1968.
- LAWSON, ELNORA, Instructor, B.Ed., Southern Illinois University, 1936; 1964.
- LINK, L. JOHN, Assistant Professor, M.F.A., University of Oklahoma, 1968; 1968.
- LINTAULT, M. JOAN, Assistant Professor, M.F.A., Southern Illinois University, 1962; 1973.
- LITTLEFIELD, F. LEE, Assistant Professor, M.A., University of New Mexico, 1968; 1968.
- MAVIGLIANO, GEORGE J., Assistant Professor, M.A., Northern Illinois University, 1967; 1970.
- ONKEN, MICHAEL O., Assistant Professor, M.A., Northern Illinois University, 1966; 1968.
- PAULSON, ROBERT L., Assistant Professor, M.F.A., University of Wisconsin, 1967; 1967.
- ROACH, LULA D., Associate Professor, *Emerita*, M.A., Washington University, 1953; 1930.
- SULLIVAN, JAMES E., Associate Professor, M.A., University of California at Los Angeles, 1965; 1969.
- SULLIVAN, MILTON F., Professor and *Director*, M.A., Columbia University, 1951; 1952.
- WALSH, ROBERT A., Instructor, M.A., University of Iowa, 1969; 1970.
- WALSH, THOMAS J., Associate Professor, M.F.A., University of Michigan, 1962; 1967.
- WOOD, DAN D., Assistant Professor, M.A., University of Iowa, 1968; 1968.

Aviation Technologies (School of Technical Careers)

- BIRKHEAD, LARRY M., Instructor, Avionics Technology, 1973.
- BOLTZ, LEONARD, Assistant Instructor, Aviation Technology; 1973.
- BURKEY, PAUL D., Instructor, Aviation Technology, 1968.
- CANNON, RICHARD, Instructor, Aviation Technology, 1966.
- DAROSA, EDMUND., Professor and *Chairman*, Aviation Technology, B.A., College of Saint Joseph, Portugal, 1936; 1964.
- ELLINGSWORTH, DAVID A., Instructor, Aviation Technology, 1971.
- HAMMARLUND, RICHARD, Assistant Instructor, Aviation Technology, A.A.S., Southern Illinois University, 1974; 1974.
- HARTSEL, DONALD R., Jr., Instructor, Avionics Technology, 1973.
- KOLKMEYER, ROBERT O., Instructor, Aviation Technology, M.S.Ed., Southern Illinois University, 1971; 1971.
- OHMAN, LENNART R., Assistant Professor, Aviation Technology, B.S., University of Illinois, 1964; 1967.
- RICH, DAVID L., Instructor, Aviation Technology, 1968.

SCHAFER, JOSEPH A., Assistant Professor, Aviation Technology, B.S., Lewis College, 1960; 1965.
 VERNER, GERRY D., Instructor, Aviation Technology, B.S., Southern Illinois University, 1973; 1973.
 WHITACRE, GERRY LEE, Instructor, Aviation Technology, 1972.

Black American Studies (College of Human Resources)

CHARLES, EUNICE A., Assistant Professor, Ph.D., Boston University, 1973; 1974.
 HARPER, CLIFFORD D., Associate Professor and *Director*, Ph.D., St. Louis University, 1972; 1973.
 JONES, McKINLEY, Assistant Professor, A.M., University of Illinois, 1971; 1973.
 STURGIS, GLADYS M., Lecturer, M.S.L.S., Atlanta University, 1964; 1973.

Botany (College of Science)

ASHBY, WILLIAM C., Professor, Ph.D., University of Chicago, 1950; 1960;
 MARBERRY WILLIAM M., Assistant Professor, *Emeritus*, University of Illinois, 1936; 1939.
 MATTEN, LAWRENCE C., Associate Professor, Ph.D., Cornell University, 1965; 1965.
 MOHLENBROCK, ROBERT H., Professor and *Chairman*, Ph.D., Washington University, 1957; 1957.
 MYERS, OVAL, JR., Associate Professor, Ph.D., Cornell University 1963; 1968.
 OLAH, LADISLAO V., Professor, *Emeritus*, Ph.D., Stephen Tisza University, Hungary, 1934; 1959.
 PAPPELIS, ARISTOTEL J., Professor, Ph.D., Iowa State University, 1957; 1960.
 RICHARDSON, JOHN, Lecturer, M.F.A., Ohio University, 1969; 1969.
 ROBERTSON, PHILIP A., Assistant Professor, Ph.D., Colorado State University, 1968; 1970.
 SCHMID, WALTER E., Professor, Ph.D., University of Wisconsin, 1961; 1962.
 STOTLER, BARBARA C., Assistant Professor, Ph.D., University of Cincinnati, 1968; 1970.
 STOTLER, RAYMOND E., Assistant Professor, Ph.D., University of Cincinnati, 1968; 1969.
 SUNDBERG, WALTER J., Assistant Professor, Ph.D., University of California, 1971; 1972.
 TINDALL, DONALD R., Associate Professor, Ph.D., University of Louisville, 1966; 1966.
 UGENT, DONALD, Associate Professor, Ph.D., University of Wisconsin, 1966; 1968.
 VERDUIN, JACOB, Professor, Ph.D., Iowa State University, 1947; 1964.
 VOIGT, JOHN W., Professor, Ph.D., University of Nebraska, 1950; 1950.
 WELCH, WALTER B., Professor, *Emeritus*, Ph.D., University of Chicago, 1937; 1939.
 YOPP, JOHN H., Associate Professor, Ph.D., University of Louisville, 1969; 1970.

Business Education (College of Education)

BAUERNFEIND, HARRY B., Professor, *Emeritus*, M.A.Ed., Northwestern University, 1943; 1951.
 BUBOLTZ, VAN A., Assistant Professor, *Emeritus*, M.A., Northwestern University, 1937; 1937.
 BURGER, OPAL JUNE, Assistant Professor, M.S.Ed., Southern Illinois University, 1961; 1964.
 JACOBSON, HARRY E., Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969; 1967.
 RAHE, HARVES C., Professor and *Chairman*, Ed.D., Indiana University, 1950; 1950.

Center for the Study of Crime, Delinquency, and Corrections (College of Human Resources)

ALEXANDER, MYRL E., Professor, *Emeritus*, B.A., Manchester College, 1930; 1961.
 ANDERSON, DENNIS, Assistant Professor, Ed.D., University of Nebraska, 1970; 1970.
 BARRY, DONALD M., Instructor, M.A., Southern Illinois University, 1971; 1972.
 COUGHLIN, JOSEPH S., Professor, M.S.W., University of Wisconsin, 1954; 1973.
 DREHER, ROBERT H., Associate Professor, J.D., University of Illinois, 1940; 1967.
 EYNON, THOMAS G., Professor, Ph.D., Ohio State University, 1959; 1968.
 FARRELL, ROBERT E., Assistant Professor, J.D., DePaul University, 1971; 1974.
 GRENFELL, JOHN E., Professor, Ed.D., Oregon State University, 1966; 1966.
 JOHNSON, ELMER H., Professor, Ph.D., University of Wisconsin, 1950; 1966.
 KIEFER, GEORGE W., Assistant Instructor, B.A., Southern Illinois University, 1974; 1966.

- LOCKWOOD, BROCTON D., Assistant Professor, J.D., Vanderbilt University, 1966; 1973.
 MATTHEWS, CHARLES V., Associate Professor and *Director*, M.A., University of Kansas City, 1951; 1962.
 RICH, VERNON, Associate Professor, Ph.D., Michigan State University, 1971; 1972.
 WILSON, KENNETH G., Assistant Professor, Ph.D., Kansas State University, 1973; 1973.
 WILSON, Nanci K., Assistant Professor, Ph.D., University of Tennessee, 1972; 1972.

Chemistry and Biochemistry (College of Science)

- ARNOLD, RICHARD T., Professor and *Chairman*, Ph.D., University of Illinois, 1937; 1969.
 BEMILLER, JAMES N., Professor, Ph.D., Purdue University, 1959; 1961.
 BEYLER, ROGER E., Professor, Ph.D., University of Illinois, 1949; 1959.
 BOLEN, D. WAYNE, Assistant Professor, Ph.D., Florida State University, 1969; 1971.
 BROWN, GEORGE E., Professor, *Emeritus*, Ph.D., Iowa State University, 1941; 1962.
 CASKEY, ALBERT L., Associate Professor, Ph.D., Iowa State University, 1961; 1964.
 COX, JAMES A., Assistant Professor, Ph.D., University of Illinois, 1967; 1969.
 DORSEY, J. KEVIN, Assistant Professor, Ph.D., University of Wisconsin, 1968; 1973.
 EMPTAGE, MICHAEL R., Assistant Professor, Ph.D., Harvard University, 1965; 1968.
 GIBBARD, H. FRANK, JR., Associate Professor, Ph.D., Massachusetts Institute of Technology, 1967; 1967.
 GUYON, JOHN C., Professor, Ph.D., Purdue University, 1961; 1974.
 HADLER, HERBERT I., Professor, Ph.D., University of Wisconsin, 1952; 1966.
 HADLEY, ELBERT H., Professor, Ph.D., Duke University, 1940; 1947.
 HALL, J. HERBERT, Professor, Ph.D., University of Michigan, 1959; 1962.
 HARGRAVE, PAUL A., Assistant Professor, Ph.D., University of Minnesota, 1970; 1973.
 HINCKLEY, CONRAD C., Associate Professor, Ph.D., University of Texas, 1964; 1966.
 KOSTER, DAVID F., Associate Professor, Ph.D., Texas A & M University, 1965; 1967.
 MEYERS, CAL Y., Professor, Ph.D., University of Illinois, 1951; 1964.
 NECKERS, J. W., Professor, *Emeritus*, Ph.D., University of Illinois, 1927; 1927.
 SCHMULBACH, C. DAVID, Professor, Ph.D., University of Illinois, 1958; 1965.
 SLOCUM, DONALD W., Professor, Ph.D., New York University, 1963; 1965.
 SMITH, GERARD V., Professor, Ph.D., University of Arkansas, 1959; 1966.
 SUNG, MICHAEL T., Assistant Professor, Ph.D., University of Wisconsin, 1968; 1971.
 TRIMBLE, RUSSELL F., Professor, Ph.D., Massachusetts Institute of Technology, 1951; 1954.
 TYRRELL, JAMES, Associate Professor, Ph.D., University of Glasgow, 1963; 1967.
 VAN LENTE, KENNETH A., Professor, *Emeritus*, Ph.D., University of Michigan, 1931; 1931.
 WOTIZ, JOHN H., Professor, Ph.D., Ohio State University, 1948; 1967.

Child and Family (College of Human Resources)

- EDDLEMAN, E. JACQUELINE, Assistant Professor, Ph.D., Southern Illinois University, 1970; 1969.
 FLYNN, TIMOTHY M., Assistant Professor, Ph.D., Florida State University, 1970; 1970.
 KRAFT, T. KATHLEEN, Assistant Professor, M.S., Southern Illinois University, 1968; 1969.
 OUEDRAOGO, BARBARA HOSKIN, Assistant Professor, Ph.D., Southern Illinois University, 1972; 1970.
 PONTON, MELVA F., Assistant Professor, M.S., University of Illinois, 1956; 1967.
 ROGERS, SHIRLEY S., Assistant Professor, M.S.Ed., Southern Illinois University, 1961; 1968.
 SPEES, EDITH C., Assistant Professor, Ph.D., Claremont Graduate School, 1968; 1969.
 ZUNICH, MICHAEL, Professor and *Chairman*, Ph.D., Florida State University, 1959; 1965.

Cinema and Photography (College of Communications and Fine Arts)

- BLUMENBERG, RICHARD M., Associate Professor, Ph.D., Ohio University, 1969; 1970.
 GILMORE, DAVID A., Assistant Professor, M.F.A., Ohio University, 1969; 1969.
 GOODGER-HILL, GARETH M.E., Assistant Professor, M.S., University of Oregon, 1972; 1973.
 HORRELL, C. WILLIAM, Professor, Ed.D., Indiana University, 1955; 1949.
 MERCER, JOHN, Professor, Ph.D., University of Nebraska, 1952; 1958.
 PAINE, FRANK, Assistant Professor, B.S., Iowa State University, 1950; 1960.

SWEDLUND, CHARLES A., Associate Professor and *Chairman*, M.S., Illinois Institute of Technology, 1961; 1971.
 ZIRPOLA, DONALD J., Assistant Professor, M.F.A., University of Southern California, 1973; 1973.

Clothing and Textiles (College of Human Resources)

BERRY, THELMA HUFF, Professor, Ed.D., Columbia University, 1963; 1966.
 FRIEND, SHIRLEY E., Associate Professor and *Chairman*, Ed.D., University of Arkansas, 1969; 1972.
 HIGGERSON, MARY JO., Instructor, M.S., Southern Illinois University, 1974; 1974.
 PADGETT, ROSE, Professor, Ph.D., Purdue University, 1955; 1962.
 RIDLEY, SAMANTHA SUE, Assistant Professor, M.S., Southern Illinois University, 1959; 1964.
 WHITESEL, RITTA, Associate Professor, *Emerita*, M.A., Columbia University, 1941; 1955.
 WOODY, LUCY K., Professor, *Emerita*, M.A., Columbia University, 1930; 1911.

Community Development (College of Human Resources)

BHATTACHARYYA, JNANABROTA, Associate Professor, Ph.D., University of Delhi, India, 1969; 1968.
 DELANEY, H. RICHARD, Associate Professor, Ph.D., University of Missouri, Columbia, 1967; 1969.
 DENISE, PAUL S., Assistant Professor and *Chairman*, Ph.D., University of California, Berkeley, 1974; 1968.
 HANSON, JAMES M., Assistant Professor, Ph.D., Southern Illinois University, 1974; 1974.
 POSTON, RICHARD, Professor, *Emeritus*, B.A., University of Montana, 1940; 1953.
 THOMAS, RICHARD M., Professor, D.Ed., University of California, Los Angeles, 1964; 1966.
 WAKELEY, RAYMOND E., Professor, *Emeritus*, Ph.D., Cornell University, 1928; 1961.

Computer Science (College of Liberal Arts)

DANHOF, KENNETH J., Assistant Professor, Ph.D., Purdue University, 1969; 1969.
 GUHA, RATAN K., Assistant Professor, Ph.D., University of Texas at Austin, 1970; 1970.
 MARK, ABRAHAM M., Professor and *Chairman*, Ph.D., Cornell University, 1947; 1950.
 RICKMAN, JON T., Assistant Professor, Ph.D., Washington State University, 1972; 1973.
 WRIGHT, WILLIAM E., Assistant Professor, D.Sc., Washington University, 1972; 1970.

Design (College of Human Resources)

ARCHER, RICHARD, Assistant Instructor, B.A., Southern Illinois University, 1970; 1971.
 BRETSCHER, CARL E., Instructor, B.S., University of Illinois, 1935; 1957.
 BUSCH, W. LARRY, Assistant Professor, M.S., Southern Illinois University, 1970; 1970.
 ELLNER, JACK R., Professor, Ph.D., New York University, 1969; 1971.
 FETTER, WILLIAM A., Lecturer, B.F.A., University of Illinois, 1952; 1970.
 GROSKOWSKY, HAROLD, Lecturer, Certificate, IIT, Institute of Design, Chicago, 1960.
 LONERGAN, JOHN F. H., Assistant Professor and *Chairman*, B.A., University of Illinois, 1939; 1950.
 MERCHANT, JANE, Assistant Instructor, B.A., Southern Illinois University, 1968; 1971.
 PERK, HARRY F.W., Lecturer, B.A., University of California at Los Angeles 1951; 1964.
 PRATT, DAVIS J., Lecturer, Certificate, University of Chicago and IIT, Institute of Design, Chicago, 1957.
 PRATT, ELSA K., Lecturer, Certificate, Pratt Institute, Brooklyn, New York, IIT, Institute of Design, Chicago, 1957.
 ROAN, HERBERT, Lecturer and Instructor, Certificate, Cooper Union, 1938; 1957.
 SCHOEN, ALAN HUGH, Professor, Ph.D., University of Illinois, 1958; 1973.

Economics (College of Liberal Arts)

ADAMS, DONALD R., JR., Associate Professor, Ph.D., University of Pennsylvania, 1967; 1968.
 BLACKORBY, CHARLES, Associate Professor, Ph.D., Johns Hopkins University, 1967; 1972.

- BOHI, DOUGLAS R., Associate Professor and *Chairman*, Ph.D., Washington State University, 1967; 1970.
- BUSER, STEPHEN A., Assistant Professor, Ph.D., Boston College, 1972; 1972.
- CORNWALL, JOHN L., Professor, Ph.D., Harvard University, 1958; 1970.
- EDELMAN, MILTON T., Professor, Ph.D., University of Illinois, 1951; 1950.
- ELLIS, ROBERT J., JR., Associate Professor, Ph.D., University of Virginia, 1966; 1962.
- FORAN, TERRY G., Assistant Professor, Ph.D., Pennsylvania State University, 1970; 1969.
- FORD, ARTHUR M., Associate Professor, Ph.D., The New School for Social Research, 1973; 1970.
- FRYMAN, RICHARD F., Associate Professor, Ph.D., University of Illinois, 1967; 1966.
- HAND, GEORGE H., Professor, *Emeritus*, Ph.D., Princeton University, 1939; 1952.
- HICKMAN, C. ADDISON, Professor, Vandever Chair of Economics, Ph.D., University of Iowa, 1942; 1960.
- LAYER, ROBERT G., Professor, Ph.D., Harvard University, 1952; 1955.
- MARTINSEK, CATHERINE W., Instructor, M.A., University of California, Los Angeles, 1950; 1972.
- MARTINSEK, THOMAS A., Professor, Ph.D., Ohio State University, 1956; 1959.
- MILES, EDWARD V., JR., Professor, *Emeritus*, A.M., St. Louis University, 1934; 1919.
- MORRISON, VERNON G., Professor, *Emeritus*, Ph.D., University of Nebraska, 1961; 1947.
- PULSIPHER, ALLAN G., Associate Professor, Ph.D., Tulane University, 1971; 1968.
- RUSSELL, MILTON R., Professor, Ph.D., University of Oklahoma, 1963; 1964.
- STALON, CHARLES G., Associate Professor, Ph.D., Purdue University, 1966; 1963.
- STOWE, PETER S., Assistant Professor, Ph.D., Purdue University, 1970; 1968.
- TRACY, RONALD L., Assistant Professor, Ph.D., Michigan State University, 1975; 1974.
- VOGEL, ROBERT C., Associate Professor, Ph.D., Stanford University, 1967; 1972.
- WIEGAND, G. C., Professor, *Emeritus*, Ph.D., Northwestern University, 1950; 1956.

Educational Administration and Foundations (College of Education)

- ARMISTEAD, FRED J., Professor, *Emeritus*, Ph.D., University of California, 1960; 1961.
- BACH, JACOB O., Professor, Ph.D., University of Wisconsin, 1951; 1951.
- BRACEWELL, GEORGE, Professor, *Emeritus*, Ed.D., Washington University, 1952; 1931.
- BRAMMELL, PARIS R., Professor, *Emeritus*, Ph.D., University of Washington, 1930; 1960.
- BROWNING, BARNEY K., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1965.
- BRYANT, ROYE R., Professor, *Emeritus*, D.Ed., Washington University, 1952; 1948.
- CHILDS, JOHN L., Professor, *Emeritus*, Ph.D., Teachers College, Columbia University, 1931; 1961.
- DENNIS, LAWRENCE J., Associate Professor, Ph.D., Southern Illinois University, 1968; 1968.
- DEY, RAYMOND H., Professor, *Emeritus*, Ed.D., Washington University, 1952; 1946.
- EATON, WILLIAM E., Assistant Professor, Ph.D., Washington University, 1971; 1971.
- EWING, PARMER L., Professor, *Emeritus*, Ed.D., New York University, 1950; 1965.
- FISHBACK, WOODSON W., Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1947; 1948.
- HALL, JAMES H., Associate Professor, *Emeritus*, Ed.D., George Washington University, 1950; 1952.
- JACOBS, ROBERT, Professor, *Emeritus*, Ed.D., Wayne State University, 1949; 1962.
- KAISER, DALE E., Associate Professor, Ph.D., University of Illinois, 1963; 1966.
- LAWLER, EUGENE S., Professor, *Emeritus*, Ph.D., Columbia University, 1932; 1961.
- LEAN, ARTHUR E., Professor, Ph.D., University of Michigan, 1948; 1957.
- McKENZIE, WILLIAM R., Professor, Ed.D., University of Denver, 1953; 1964.
- MERWIN, BRUCE W., Professor, *Emeritus*, Ph.D., University of Kansas, 1929; 1927.
- MOORE, MALVIN E., Professor, Ed.D., George Peabody College for Teachers 1959; 1968.
- NEAL, CHARLES D., Professor, *Emeritus*, Ed.D., Indiana University, 1948; 1948.
- PARKER, JAMES C., Assistant Professor, Ed.D., University of Tennessee, 1971; 1971.
- RIPPLE, KENNETH E., Associate Professor, D.Ed., Michigan State University, 1968; 1974.
- SASSE, EDWARD B., Professor and *Chairman*, Ph.D., University of Wisconsin, 1966; 1966.
- SHELTON, WILLIAM E., Associate Professor, Ph.D., University of Chicago, 1950; 1951.
- STUCK, DEAN, Professor, Ph.D., Iowa State University, 1968; 1968.
- VERDUIN, JOHN R., JR., Professor, Ph.D., Michigan State University, 1962; 1967.

WARREN, F.G., Professor, *Emeritus*, A.M., University of Chicago, 1928; 1913.
 WOHLWEND, HERBERT W., Associate Professor, Ph.D., Southern Illinois University, 1964; 1958.

Electrical Sciences and Systems Engineering (School of Engineering and Technology)

ASHWORTH, EDWIN ROBERT, Assistant Professor, Ph.D., Southern Illinois University, 1972; 1963.
 DODD, CURTIS W., Associate Professor, Ph.D., Arizona State University, 1967; 1967.
 DUNNING, E. LEON, Professor, Ph.D., University of Houston, 1967; 1957.
 FEISTE, VERNOLD K., Associate Professor, Ph.D., University of Missouri at Columbia, 1966; 1966.
 GRISMORE, F. LEE, JR., Associate Professor, Ph.D., Georgia Institute of Technology, 1970; 1969.
 LIT, ALFRED, Professor, Ph.D., Columbia University, 1948; 1961.
 McCALLA, THOMAS, JR., Associate Professor, Ph.D., Case Western Reserve University, 1969; 1969.
 MOORE, JERRY D., Assistant Professor, Ph.D., University of Alabama, 1972; 1974.
 RAWLINGS, CHARLES A., Assistant Professor, Ph.D., Southern Illinois University, 1974; 1964.
 SMITH, JAMES G., Professor and *Chairman*, Ph.D., University of Missouri at Rolla, 1967; 1966.

Elementary Education (College of Education)

BRADFIELD, LUTHER E., Professor, Ed.D., Indiana University, 1953; 1955.
 BROD, ERNEST E., Professor, *Emeritus*, D.Ed., University of Northern Colorado, 1953; 1951.
 DUSENBERY, MIRIAM C., Professor, Ph.D., University of Iowa, 1964; 1968.
 HILL, MARGARET K., Professor, Ed.D., Boston University, 1948; 1965.
 HUMADI, MARGARET C., Lecturer, Ph.D., Southern Illinois University, 1974; 1973.
 HUNGERFORD, HAROLD R., Associate Professor, Ph.D., Southern Illinois University, 1970; 1965.
 LAMB, MORRIS L., Assistant Professor, D.Ed., University of Oklahoma, 1970; 1970.
 LEE, J. MURRAY, Professor, *Emeritus*, Ph.D., Columbia University, 1934; 1958.
 LINDBERG, DORMALEE H., Associate Professor, Ed.D., University of Missouri, Columbia, 1969; 1969.
 MALONE, WILLIS E., Professor, Ph.D., Ohio State University, 1950; 1939.
 MATTHIAS, MARGARET, Assistant Professor, Ph.D., Southern Illinois University, 1972; 1972.
 MATTHIAS, WILLIAM, JR., Associate Professor, Ed.D., University of Illinois, 1964; 1967.
 MORPURGO, JANE, Instructor, M.Ed., University of Illinois, 1968; 1974.
 PAIGE, DONALD D., Professor and *Chairman*, Ed.D., Indiana University, 1966; 1966.
 QUISENBERRY, NANCY L., Assistant Professor, Ed.D., Indiana University, 1971; 1971.
 RANDOLPH, VICTOR, Professor, *Emeritus*, Ph.D., George Peabody College for Teachers, 1942; 1933.
 SHEPHERD, TERRY R., Assistant Professor, Ph.D., University of Illinois, 1971; 1971.
 SLOAN, FRED A., Professor, Ed.D., George Peabody College for Teachers, 1959; 1968.
 SWICK, KEVIN, Associate Professor, Ph.D., University of Connecticut, 1970; 1970.
 TOMERA, AUDREY, Assistant Professor, Ph.D., Southern Illinois University, 1973; 1969.

Engineering Mechanics and Materials (School of Engineering and Technology)

AL-RUBAYI, NAJIM, Associate Professor, Ph.D., University of Wisconsin, 1966; 1966.
 DAVIS, PHILIP, Professor and *Chairman*, Ph.D., University of Michigan, 1963; 1964.
 EDDINGFIELD, DAVID, Instructor, M.S., Southern Illinois University, 1966; 1971.
 EVERS, JAMES, Associate Professor, Ph.D., University of Alabama, 1969; 1969.
 JORDAN, KENNETH, Instructor, M.S., Southern Illinois University, 1970; 1968.
 NOWACKI, C. RAYMOND, Associate Professor, Ph.D., University of Illinois, 1965; 1963.
 ORTHWEIN, WILLIAM, Professor, Ph.D., University of Michigan, 1959; 1965.
 SAMI, SEDAT, Professor, Ph.D., University of Iowa, 1966; 1966.

School of Engineering and Technology—General

AMOROS, JOSE L., Professor, Ph.D., University of Madrid, 1945; 1964.

English (College of Liberal Arts)

APPLEBY, BRUCE C., Associate Professor, Ph.D., University of Iowa, 1967; 1967.

BARBER, JULIA MINETTE, Assistant Professor, *Emerita*, A.M., University of Illinois, 1915; 1936.

BARBOUR, FRANCES, Associate Professor, *Emerita*, M.A., Washington University, 1920; 1925.

BENZIGER, JAMES G., Professor, Ph.D., Princeton University, 1941; 1950.

BLACK, ROSE, Instructor, *Emerita*, M.A., Ohio State University, 1926; 1962.

BOYLE, TED EUGENE, Professor and *Chairman*, Ph.D., University of Nebraska, 1962; 1963.

BROWN, WILLIAM J., Associate Professor, Ph.D., Duke University, 1966; 1966.

BURNS, WINIFRED, Assistant Professor, *Emerita*, M.A., University of Illinois, 1933; 1939.

CAMP, GEORGE, Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1951; 1947.

CASSIDY, THOMAS E., Associate Professor, A.M., University of Notre Dame, 1938; 1958.

CLARK, MARTHA, Instructor, *Emerita*, A.M., Southern Illinois University, 1953; 1949.

COHN, ALAN MARTIN, Professor, M.S., University of Illinois, 1955; 1955.

COLEMAN, E. C., Professor, *Emeritus*, Ph.D., University of Illinois, 1936; 1946.

DODD, DIANA L., Assistant Professor, M.A., Southern Illinois University, 1954; 1955.

DONOW, HERBERT, Associate Professor, Ph.D., University of Iowa, 1966; 1966.

EPSTEIN, EDMUND L., Professor, Ph.D., Columbia University, 1967; 1965.

FRIEND, JEWELL, Associate Professor, Ph.D., Southern Illinois University, 1970; 1967.

GARDNER, JOHN C., Professor, Ph.D., University of Iowa, 1958; 1965.

GOODIN, GEORGE, Associate Professor, Ph.D., University of Illinois, 1962; 1966.

GRIFFIN, ROBERT P., Associate Professor, Ph.D., University of Connecticut, 1965; 1965.

HARPER, CLIFFORD D., Associate Professor, Ph.D., St. Louis University, 1972; 1973.

HATTON, THOMAS J., Associate Professor, Ph.D., University of Nebraska, 1966; 1965.

HILLEGAS, MARK, Professor, Ph.D., Columbia University, 1957; 1965.

HOWELL, JOHN M., Associate Professor, Ph.D., Tulane University, 1963; 1963.

HURLEY, PAUL, Professor, Ph.D., Duke University, 1962; 1965.

KRAPPE, EDITH, Associate Professor, *Emerita*, Ph.D., University of Pennsylvania, 1953; 1929.

LAWSON, RICHARD A., Associate Professor, Ph.D., Tulane University, 1966; 1963.

LEONARD, JOHN J., Associate Professor, M.A., University of Iowa, 1941; 1957.

LINGLE, FRED, Assistant Professor, *Emeritus*, A.M., University of Illinois, 1935; 1948.

LITTLE, JUDY RUTH, Assistant Professor, Ph.D., University of Nebraska, 1969; 1969.

MARTIN, JOAN FOLEY, Instructor, M.A., Southern Illinois University, 1959; 1961.

MITCHELL, BETTY LOU, Assistant Professor, M.A., Southern Illinois University, 1951; 1949.

MOORE, HARRY T., Professor and Research Professor, Ph.D., Boston University, 1951; 1963.

MOSS, SIDNEY P., Professor, Ph.D., University of Illinois, 1954; 1964.

PARTLOW, ROBERT B., JR., Professor, Ph.D., Harvard University, 1955; 1957.

PETERSON, RICHARD F., Assistant Professor, Ph.D., Kent State University, 1969; 1969.

PIPER, HENRY DAN, Professor, Ph.D., University of Pennsylvania, 1950; 1962.

RAINBOW, RAYMOND, Associate Professor, Ph.D., University of Chicago, 1959; 1949.

RAIZIS, M. BYRON, Associate Professor, Ph.D., New York University, 1966; 1966.

RICHMAN, LOIS ANNE, Instructor, A.M., University of Illinois, 1962; 1963.

RUDNICK, HANS, Associate Professor, Ph.D., University of Freiburg, Germany, 1966; 1966.

SCHONHORN, MANUEL, Professor, Ph.D., University of Pennsylvania, 1963; 1968.

SCHULTZ, JOHN HOWARD, Professor, Ph.D., Harvard University, 1940; 1967.

SIMEONE, WILLIAM E., Professor, Ph.D., University of Pennsylvania, 1950; 1950.

SIMON, MARY C., Instructor, *Emerita*, A.M., University of Illinois, 1940; 1959.

STIBITZ, E. EARLE, Professor, Ph.D., University of Michigan, 1951; 1952.

TAYLOR, LARRY E., Associate Professor, Ph.D., University of Oklahoma, 1969; 1968.

TENNEY, CHARLES D., University Professor, *Emeritus*, Ph.D., University of Oregon, 1931; 1931.

TRAVIS, EDNA, Instructor, *Emerita*, M.S. in Ed., Southern Illinois University, 1948; 1948.
 VIETH, DAVID MUENCH, Professor, Ph.D., Yale University, 1953; 1965.
 WEBB, HOWARD W., JR., Professor, Ph.D., University of Iowa, 1953; 1956.
 WESHINSKEY, ROY K., Assistant Professor, M.S., Southern Illinois University, 1950; 1961.

Family Economics and Management (College of Human Resources)

BROOKS, THOMAS M., Professor, Ph.D., Pennsylvania State University, 1961; 1971.
 CRAIG, KAREN E., Associate Professor, Ph.D., Purdue University, 1969; 1967.
 CRYNES, CAROLYN S., Instructor, M.S., Indiana State University, 1972; 1972.
 EDMONDSON, MARY ELLEN, Instructor, M.S., Indiana State University, 1971; 1971.
 HEISLER, ARLENE J., Assistant Professor, M.S., Southern Illinois University, 1959; 1960.

Finance (College of Business and Administration)

CORBETT, RICHARD B., Assistant Professor, Ph.D., Georgia State University, 1974; 1971.
 ELSAID, HUSSEIN H., Associate Professor, Ph.D., University of Illinois, 1968; 1967.
 GEHR, ADAM K., Assistant Professor, Ph.D., Ohio State University, 1973; 1973.
 HENKEL, JAN W., Assistant Professor, J.D., Loyola University at New Orleans, 1971; 1973.
 SPRECHER, C. RONALD, Associate Professor, Ph.D., University of Illinois, 1969; 1970.
 TYLER, R. STANLEY, Associate Professor, J.D., University of Illinois, 1952; 1970.
 VAUGHN, DONALD E., Professor and *Chairman*, Ph.D., University of Texas, 1961; 1970.
 WATERS, GOLA E., Associate Professor, J.D., University of Iowa, 1957, Ph.D., Southern Illinois University, 1970; 1965.

Food and Nutrition (College of Human Resources)

BARNES, MARY LOUISE, Professor, *Emerita*, M.S., Iowa State College, 1931; 1929.
 BECKER, HENRIETTA, Lecturer, M.S., Southern Illinois University, 1964; 1962.
 HARPER, JENNIE M., Professor, *Emerita*, Ph.D., Cornell University, 1941; 1958.
 KONISHI, FRANK, Professor and *Chairman*, Ph.D., Cornell University, 1958; 1961.
 OSBORN, DORIS, Instructor, M.S., Southern Illinois University, 1966; 1974.
 PAYNE, IRENE R., Professor, Ph.D., Cornell University, 1960; 1965.
 QUIGLEY, EILEEN, Professor, *Emerita*, Ed.D., University of Missouri, 1947; 1948.

Foreign Languages and Literatures (College of Liberal Arts)

ARTILES, JENARO J., Visiting Professor, *Emeritus*, Ph.D., Canary Pontifical University, Las Palmas, 1918; Ph.D., Central University, Madrid, 1932; Ph.D., University of Havana, Cuba, 1946; 1963.
 AYDT, JUDITH, Instructor, M.A., Southern Illinois University, 1966; 1969.
 BORK, ALBERT W., Professor, *Emeritus*, Doctor en Letras, National University of Mexico, 1944; 1958.
 BROWN, SANDRA L., Assistant Professor, Ph.D., University of North Carolina, 1969; 1973.
 CANFIELD, D. LINCOLN, Visiting Professor, *Emeritus*, Ph.D., Columbia University, 1934; 1970.
 DAVIS, CARY, Professor, *Emeritus*, Ph.D., University of Chicago, 1936; 1930.
 FRENCH, HOWARD, Associate Professor, Ph.D., Indiana University, 1952; 1962.
 GOBERT, DAVID L., Professor, Ph.D., University of Iowa, 1960; 1965.
 HARTMAN, STEVEN LEE, Assistant Professor, Ph.D., University of Wisconsin, 1971; 1971.
 HARTWIG, HELLMUT A., Professor, Ph.D., University of Illinois, 1943; 1948.
 KILKER, JAMES, Associate Professor, Ph.D., University of Missouri at Columbia, 1961; 1967.
 KUPCEK, JOSEPH, Professor, Ph.D., Comenius University, Bratislava, Czechoslovakia, 1943; 1962.
 LIEDLOFF, HELMUT, Associate Professor, Ph.D., Philipps University, Germany, 1956; 1959.
 McBRIDE, CHARLES, Associate Professor, Ph.D., University of Texas, 1968; 1972.
 MEINHARDT, WARREN, Associate Professor, Ph.D., University of California at Berkeley, 1960; 1969.
 NEUFELD, ANNA K., Assistant Professor, *Emerita*, M.A., University of Kansas, 1937; 1945.

O'BRIEN, JOAN, Assistant Professor, Ph.D., Fordham University, 1961; 1969.
 O'MEARA, MAURICE, Assistant Professor, Ph.D., University of Iowa, 1967; 1969.
 ORECHWA, OLGA, Assistant Professor, Ph.D., Ukrainian Free University, Germany, 1970; 1967.
 PEACOCK, VERA L., Professor, *Emerita*, Ph.D., Cornell University, 1930; 1930.
 SMITH, MADELEINE M., Associate Professor, *Emerita*, Ph.D., Yale University, 1952; 1929.
 SOUTHWORTH, MARIE-JOSE, Associate Professor, Ph.D., University of Pennsylvania, 1970; 1970.
 SPECK, CHARLES, Assistant Professor, Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963; 1970.
 TAI, JAMES, Associate Professor, Ph.D., Indiana University, 1970; 1970.
 TIMPE, EUGENE F., Professor and *Chairman*, Ph.D., University of Southern California, 1960; 1972.
 ULNER, ARNOLD, Assistant Professor, Ph.D., University of Missouri at Columbia, 1972; 1962.
 VOGELY, MAXINE, Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1969; 1965.
 WILKINSON, MILDRED, Instructor, M.A., Southern Illinois University, 1965; 1963.
 WOODBRIDGE, HENSLEY, Professor, Ph.D., University of Illinois, 1950; 1965.

Forestry (School of Agriculture)

BAUMGARTNER, DAVID C., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1973; 1973.
 BEY, CALVIN F., Adjunct Assistant Professor, Ph.D., Iowa State University 1970; 1969.
 BUDELSKY, CARL A., Assistant Professor, Ph.D., University of Arizona 1969; 1967.
 BURDE, JOHN H., III, Assistant Professor, Ph.D., University of Arizona, 1975; 1974.
 CHAPMAN, ARTHUR G., Adjunct Professor, Ph.D., Ohio State University 1933; 1964.
 CHEN, PETER Y., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1968; 1968.
 CHILMAN, KENNETH C., Associate Professor, Ph.D., University of Michigan, 1972; 1973.
 FRALISH, JAMES S., Assistant Professor, Ph.D., University of Wisconsin, 1970; 1969.
 FUNK, DAVID T., Adjunct Associate Professor, Ph.D., Michigan State University, 1971; 1967.
 GAFFNEY, GERALD R., Assistant Professor, Ph.D., Southern Illinois University, 1970; 1969.
 HOSLEY, NEIL W., Professor, *Emeritus*, Ph.D., University of Michigan, 1938; 1958.
 KUNG, FAN H., Assistant Professor, Ph.D., Michigan State University, 1968; 1970.
 McCURDY, DWIGHT R., Professor, Ph.D., Ohio State University, 1964; 1965.
 MOSLEMI, ALI A., Professor and *Chairman*, Ph.D., Michigan State University, 1964; 1965.
 MYERS, CHARLES C., Associate Professor, Ph.D., Purdue University, 1966; 1973.
 NOWAK, PAUL F., Associate Professor, Ph.D., University of Michigan, 1969; 1969.
 ROSEN, HOWARD N., Adjunct Assistant Professor, Ph.D., Northwestern University, 1969; 1970.
 ROTH, PAUL L., Associate Professor, Ph.D., Kansas State University, 1968; 1967.
 SATCHELL, DONALD P., Associate Professor, Ph.D., North Carolina State University, 1951; 1969.
 SCHLESINGER, RICHARD C., Adjunct Assistant Professor, Ph.D., State University of New York, 1970; 1970.
 SESCO, JERRY, Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1974; 1974.
 WEAVER, GEORGE T., Assistant Professor, Ph.D., University of Tennessee, 1972; 1970.
 YAMBERT, PAUL A., Professor, Ph.D., University of Michigan, 1960; 1969.

Geography (College of Liberal Arts)

AREY, DAVID G., Associate Professor, Ph.D., Clark University, 1969; 1971.
 BAUMANN, DUANE D., Associate Professor, Ph.D., Clark University, 1968; 1967.
 BEAZLEY, RONALD I., Professor, Ph.D., Purdue University, 1954; 1959.
 CARTER, DOUGLAS B., Professor and *Chairman*, Ph.D., University of Washington, 1957; 1964.
 CHRISTENSEN, DAVID E., Professor, Ph.D., University of Chicago, 1956; 1961.
 CUNNINGHAM, FLOYD, Professor, *Emeritus*, Ph.D., Clark University, 1930; 1947.
 HORSLEY, A. DOYNE, Assistant Professor, Ph.D., Southern Illinois University, 1974; 1968.
 IRWIN, DANIEL R., Associate Professor, Ph.D., Syracuse University, 1972; 1959.

JONES, DAVID L., Professor, Ph.D., Pennsylvania State University, 1960; 1965.
 KRAUSE, ANNEMARIE, Associate Professor, *Emerita*, Ph.D., University of Chicago, 1952; 1930.
 SHARPE, DAVID M., Associate Professor, Ph.D., Southern Illinois University, 1968; 1966.

Geology (College of Science)

BELL, FRANK JAMES, Assistant Professor, *Emeritus*, M.S., University of Nebraska, 1941; 1957.
 DAVIS, RICHARD W., Assistant Professor, Ph.D., University of Arizona, 1967; 1967.
 DUTCHER, RUSSELL R., Professor and *Chairman*, Ph.D., The Pennsylvania State University, 1960; 1970.
 ETHRIDGE, FRANK G., Associate Professor, Ph.D., Texas A & M University, 1970; 1970.
 FANG, JEN-HO, Professor, Ph.D., Pennsylvania State University, 1961; 1964.
 FRANK, CHARLES OTIS, Assistant Professor, Ph.D., Syracuse University, 1973; 1970.
 FRAUNFELTER, GEORGE H., Professor, Ph.D., University of Missouri, Columbia, 1964; 1965.
 HARRIS, STANLEY E., JR., Professor, Ph.D., University of Iowa, 1947; 1949.
 HOOD, WILLIAM C., Associate Professor, Ph.D., University of Montana, 1964; 1968.
 RITTER, DALE F., Professor, Ph.D., Princeton University, 1964; 1972.
 ROBINSON, PAUL D., Assistant Professor, M.S., Southern Illinois University, 1963; 1967.
 UTGAARD, JOHN E., Professor, Ph.D., Indiana University, 1963; 1965.
 ZIMMERMAN, JAY, JR., Associate Professor, Ph.D., Princeton University, 1968; 1973.
 ZIMMERMAN, JOHN R., Professor, Ph.D., Ohio State University, 1949; 1966.

Graphic Communications (School of Technical Careers)

ANDERSON, MARCIA A., Assistant Professor, Secretarial and Office Specialties, M.Ed., University of Nebraska, 1969; 1970.
 BROWN, TERENCE, Instructor, Communications and Media Technology, M.A., Stephen F. Austin University, 1965; 1972.
 DELMASTRO, EDWIN V., Instructor, Media Technology; 1967.
 GREATHOUSE, LILLIAN, Assistant Professor, Secretarial and Office Specialties, M.A., Southern Illinois University, 1970; 1969.
 HERTZ, VIVIENNE, Assistant Professor, Communications, M.A., Southern Illinois University, 1968; 1968.
 HILL, MARVIN P., Professor, *Emeritus*, M.S., University of Colorado, 1939; 1956.
 HOLMES, JOHN, Instructor, Baccalaureate Program, M.S., Southern Illinois University, 1972; 1974.
 JOHNSON, BYRON V., Instructor, Electronic Data Processing, S.T.M., McCormick Theological Seminary, 1969; 1972.
 JOHNSTON, CHESTER E., Associate Professor and *Chairman*, Secretarial and Office Specialties, M.A., George Peabody College for Teachers, 1953; 1955.
 KNUTSEN, SUE M., Instructor, Commercial Graphics, A.A., Southern Illinois University, 1963; 1970.
 KREUTZER, ANDREW N., Assistant Professor, Electronic Data Processing, M.A., City College of City University of New York, 1971; 1972.
 MARTIN, KENNETH D., Instructor, Commercial Graphics; 1969.
 MIRIANI, THERESA B., Assistant Professor, Secretarial and Office Specialties, M.S., University of Denver, 1946; 1960.
 MOORE, FRANK, Instructor, Commercial Graphics, B.A., Southern Illinois University, 1966; 1972.
 MORGAN, BARBARA, Instructor, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1972; 1973.
 PRIEST, GLENDA, Instructor, Secretarial and Office Specialties, B.S.Ed., Kansas State Teachers College, 1972; 1974.
 REYNOLDS, R. JOHN, Associate Professor and *Chairman*, Baccalaureate Program, Ph.D., Southern Illinois University, 1971; 1974.
 RICHEY, HELEN E., Assistant Professor, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1953; 1968.
 ROBB, JAMES A., Associate Professor, Electronic Data Processing, Ph.D., Southern Illinois University, 1974; 1962.
 TOOLEY, JAMES E., Instructor, *Emeritus*, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1952; 1954.

- VAUGHN, F. EUGENE, Associate Professor, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1961; 1952.
 WHITE, ROBERT L., Instructor, Media Technology, M.S.Ed., Southern Illinois University, 1962; 1965.
 WORKUN, ARTHUR E., Associate Professor, Communications, M.S.Ed., Illinois State University, 1955; 1963.
 YACK, JOHN L., Assistant Professor, Commercial Graphics, M.F.A., University of Oklahoma, 1959; 1970.

Guidance and Educational Psychology (College of Education)

- ALTEKRUSE, MICHAEL D., Professor, Ed.D., Indiana University, 1967; 1967.
 AMBLE, BRUCE ROY, Professor, Ph.D., University of Iowa, 1963; 1965.
 BARDO, HAROLD R., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1968.
 BEGGS, DONALD L., Professor, Ph.D., University of Iowa, 1966; 1966.
 BRADLEY, RICHARD W., Professor, Ph.D., University of Wisconsin, 1968; 1968.
 CODY, JOHN J., Professor, Ph.D., University of Wisconsin, 1961; 1965.
 DEICHMANN, JOHN W., Associate Professor, Ph.D., St. Louis University, 1969; 1969.
 DeWEESE, HAROLD L., Professor, Ed.D., University of Illinois, 1959; 1959.
 ELMORE, PATRICIA B., Associate Professor, Ph.D., Southern Illinois University, 1970; 1967.
 ENDSLEY, WILLIAM R., Instructor, B.S., University of Utah, 1964; 1974.
 EVANS, JOHN REAVES, Associate Professor, Ph.D., Southern Illinois University, 1968; 1970.
 GRENFELL, JOHN E., Professor, Ed.D., Oregon State University, 1966; 1966.
 HORNER, BEVERLY, Assistant Professor, Ph.D., University of Iowa, 1974; 1974.
 KELLY, FRANCIS J., Professor, Ph.D., University of Texas, 1963; 1965.
 LEITNER, DENNIS, Instructor, M.A., University of Maryland, 1971; 1974.
 LEWIS, ERNEST, Associate Professor, Ph.D., Southern Illinois University, 1971; 1970.
 LINDSEY, JEFFERSON F., Professor, Ed.D., University of Texas, 1962; 1967.
 MEEK, CLINTON ROSCOE, Professor, Ph.D., George Peabody College for Teachers, 1954; 1957.
 MILLER, WILLIAM G., Associate Professor, Ph.D., University of Iowa, 1967; 1971.
 MOUW, JOHN T., Associate Professor and *Chairman*, Ed.D., University of South Dakota, 1968; 1968.
 PHELPS, WILLIAM, Professor, *Emeritus*, Ed.D., University of Northern Colorado, 1943; 1949.
 POHLMANN, JOHN T., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1971.
 RECTOR, ALICE P., Associate Professor, Ed.D., Washington University, 1953; 1946.
 RENZAGLIA, GUY A., Professor, Ph.D., University of Minnesota, 1952; 1955.
 VIECELI, LOUIS, Assistant Professor, M.S.Ed., Southern Illinois University, 1959; 1958.
 WHITE, GORDON, Assistant Professor, Ph.D., University of Iowa, 1969; 1971.
 WOHLKE, PAULA L., Assistant Professor, Ph.D., Arizona State University, 1973; 1973.
 YATES, J. W., Professor, Ed.D., University of Missouri, Columbia, 1951; 1964.

Health Education (College of Education)

- AARON, JAMES E., Professor, Ed.D., New York University, 1960; 1957.
 AMADIO, JOHN B., Assistant Professor, Ph.D., University of Oklahoma, 1970; 1970.
 BOYDSTON, DONALD N., Professor and *Chairman*, Ed.D., Columbia University, 1949; 1955.
 BRIDGES, A. FRANK, Professor, *Emeritus*, D.H.S., Indiana University, 1952; 1947.
 CASEY, RALPH, Associate Professor, Ed.D., Columbia University, 1956; 1957.
 DENNY, FLORENCE E., Associate Professor, *Emerita*, M.A., Columbia University, 1935; 1929.
 DODD, WILLIAM, Instructor, A.M., University of Michigan, 1965; 1970.
 FERGUSON, ISAAC, Assistant Professor, Ph.D., Ohio State University, 1974; 1974.
 GRISSOM, DEWARD K., Professor, Ed.D., Columbia University, 1952; 1956.
 HAILEY, ROBERT, Instructor, M.Ed., University of Missouri, Columbia, 1959; 1970.
 HARRIS, EILEEN M., Assistant Professor, Ph.D., Southern Illinois University, 1970; 1967.
 IUBELT, GEORGE, Instructor, M.S., Indiana University, 1954; 1959.
 JONES, CURTIS, Lecturer, M.S., Northeast Missouri State University, 1974; 1974.
 JONES, RICHARD, Instructor, M.S.Ed., Southern Illinois University, 1966; 1968.

LEFEVRE, JOHN R., Professor, Ed.D., Teachers College, Columbia University, 1950; 1955.
 LINDAUER, LARRY, Assistant Professor, Ph.D., Southern Illinois University, 1972; 1972.
 MATAN, WILLIAM, Lecturer, M.S., Central Missouri State University, 1970; 1974.
 PHILLIPS, FRANCES K., Associate Professor, M.A., Columbia University, 1940; 1944.
 RICHARDSON, CHARLES E., Professor, Ed.D., University of California, Los Angeles, 1959; 1954.
 RITZEL, DALE, Associate Professor, Ph.D., Southern Illinois University, 1970; 1966.
 RUSSELL, ROBERT D., Professor, Ed.D., Stanford University, 1954; 1965.
 SLIEPCEVICH, ELENA M., Professor, D.P.E., Springfield College, 1955; 1973.
 SMITH, RICK E., Lecturer, M.S.Ed., Southern Illinois University, 1970; 1973.
 STEELE, ROBERT, Instructor, M.S.Ed., Southern Illinois University, 1963; 1973.
 VAUGHAN, ANDREW T., Professor, D.Ed., Columbia University, 1958; 1958.
 VOGEL, HERBERT, Instructor, M.S., Indiana University, 1954; 1963.
 WAGNER, TOM L., Instructor, M.S.Ed., Southern Illinois University, 1972; 1974.

Higher Education (College of Education)

ADAMS, FRANK C., Professor, Ph.D., Southern Illinois University, 1962; 1957.
 CALDWELL, OLIVER J., Professor, *Emeritus*, M.S., Oberlin College, 1927; 1966.
 CASEBEER, ARTHUR L., Associate Professor, Ed.D., Oregon State University, 1963; 1969.
 CLARK, ELMER J., Professor, Ph.D., University of Michigan, 1949; 1964.
 DAVIS, I. CLARK, Professor, Ed.D., Indiana University, 1956; 1949.
 GRAHAM, JACK W., Professor, Ph.D., Purdue University, 1951; 1951.
 GRINNELL, JOHN E., Professor, *Emeritus*, Ph.D., Stanford University, 1934; 1955.
 HAWLEY, JOHN B., Professor, Ph.D., University of Michigan, 1957; 1965.
 JUNG, LOREN B., Professor, Ph.D., Southern Illinois University, 1969; 1965.
 KEENE, ROLAND, Associate Professor, Ed.D., Washington University, 1962; 1958.
 KING, JOHN E., Professor and *Chairman*, Ph.D., Cornell University, 1941; 1967.
 MORRILL, PAUL H., Professor, Ph.D., Northwestern University, 1956; 1964.
 NOVICK, JEHIEL, Assistant Professor, Ph.D., Southern Illinois University, 1970; 1965.
 PRATT, ARDEN L., Professor, Ph.D., State University of New York at Buffalo, 1968; 1971.
 SPEES, EMIL R., Assistant Professor, Ph.D., Claremont Graduate School, 1969; 1969.
 SWINBURNE, BRUCE R., Associate Professor, Ed.D., Indiana University, 1970; 1970.
 TOLLE, DONALD J., Professor, Ed.D., Florida State University, 1957; 1967.
 ZIMMERMAN, ELWYN, Assistant Professor, Ph.D., Michigan State University, 1963; 1966.

History (College of Liberal Arts)

ADAMS, GEORGE W., Professor, *Emeritus*, Ph.D., Harvard University, 1946; 1958.
 ALLEN, HOWARD W., Professor, Ph.D., University of Washington, 1959; 1962.
 AMMON, HARRY, Professor, Ph.D., University of Virginia, 1948; 1950.
 BARTON, H. ARNOLD, Associate Professor, Ph.D., Princeton University, 1962; 1970.
 BATINSKI, MICHAEL C., Assistant Professor, Ph.D., Northwestern University, 1969; 1968.
 BREHM, DONALD L., Assistant Professor, Ph.D., St. Louis University, 1968; 1967.
 CARROTT, M. BROWNING, Associate Professor and *Chairman*, Ph.D., Northwestern University, 1966; 1967.
 CHERRY, GEORGE L., Professor, *Emeritus*, Ph.D., Northwestern University, 1938; 1947.
 CLIFFORD, JOHN R., Associate Professor, Ph.D., University of Iowa, 1954; 1955.
 CONRAD, DAVID E., Associate Professor, Ph.D., University of Oklahoma, 1962; 1967.
 DETWILER, DONALD S., Associate Professor, Dr. Phil., Göttingen University, Germany, 1961; 1967.
 FLADELAND, BETTY L., Professor, Ph.D., University of Michigan, 1952; 1962.
 GARDINER, C. HARVEY, Professor, *Emeritus*, Ph.D., University of Michigan, 1945; 1957.
 GOLD, ROBERT L., Professor, Ph.D., University of Iowa, 1964; 1965.
 KUO, PING-CHIA, Professor, *Emeritus*, Ph.D., Harvard University, 1933; 1959.
 McFARLIN, HAROLD A., Assistant Professor, Ph.D., Indiana University, 1971; 1969.
 MURPHY, JAMES B., Associate Professor, Ph.D., Louisiana State University, 1968; 1968.
 O'DAY, EDWARD J., Instructor, A.M., Indiana University, 1956; 1962.
 PITKIN, WILLIAM A., Associate Professor, *Emeritus*, Ph.D., University of Texas, 1940; 1945.

SHELBY, LON R., Professor, Ph.D., University of North Carolina, 1962; 1961.
 SIMON, JOHN Y., Professor, Ph.D., Harvard University, 1961; 1964.
 TRANI, EUGENE P., Associate Professor, Ph.D., Indiana University, 1966; 1967.
 VYVERBERG, HENRY S., Associate Professor, Ph.D., Harvard University, 1950; 1968.
 WERLICH, DAVID P., Assistant Professor, Ph.D., University of Minnesota, 1968; 1968.
 WRIGHT, JOHN I., Associate Professor, *Emeritus*, A.M., University of Chicago, 1933; 1925.
 ZUCKER, STANLEY, Associate Professor, Ph.D., University of Wisconsin, 1968; 1967.

Home Economics Education (College of Education)

BUBNAS, PHYLLIS, Assistant Professor, M.S., Southern Illinois University, 1960; 1960.
 CARTER, ROSE MARY, Assistant Professor, Ph.D., Purdue University, 1970; 1970.
 FULTS, ANNA CAROL, Professor and *Chairman*, Ph.D., Ohio State University, 1946; 1952.
 HEISLER, ARLENE J., Assistant Professor, M.S., Southern Illinois University, 1959; 1960.
 KEENAN, DOROTHY, Professor, Ed.D., University of Illinois, 1962; 1961.

Instructional Materials (College of Education)

BAUNER, RUTH E., Associate Professor, M.S., University of Illinois, 1956; 1956.
 BEDIENT, DOUGLAS, Assistant Professor, Ph.D., Southern Illinois University, 1971; 1969.
 BUTTS, GORDON K., Professor and *Chairman*, Ed.D., Indiana University, 1956; 1950.
 CAIRNS, JOHN H., Instructor, M.S., Iowa State University, 1971; 1973.
 COX, DOROTHY J., Instructor, M.S., University of Illinois, 1961; 1965.
 DALE, DORIS C., Associate Professor, D.L.S., Columbia University, 1968; 1969.
 FLETCHER, KATHLEEN G., Associate Professor, M.S., University of Illinois, 1947; 1955.
 JURGEMEYER, FREDERICK H., Assistant Professor, D.Ed., University of Oklahoma, 1970; 1970.
 KLASEK, CHARLES B., Assistant Professor, Ph.D., University of Nebraska, 1971; 1971.
 SPIGLE, IRVING S., Associate Professor, Ed.D., Indiana University, 1955; 1970.
 WENDT, PAUL R., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948; 1955.
 WINSOR, DONALD, Associate Professor, Ed.D., University of Florida, 1961; 1965.

Interior Design (College of Human Resources)

FERGUSON, K. JAMES, Adjunct Professor, B.I.D., University of Manitoba, 1950; 1974.
 GREENE, NANCY D., Instructor, M.S., University of North Carolina, 1971; 1968.
 LOUGEAY, PAUL J., Associate Professor and *Chairman*, Registered Architect, M.S., Southern Illinois University, 1973; 1952.
 MORIGI, FRANCIS C., Assistant Professor, M.F.A., Art Institute of Chicago, 1963; 1973.
 OLVERA, JOHN C., Assistant Instructor, B.S., Southern Illinois University, 1974; 1974.
 PULLEY, CHARLES M., Assistant Professor, Registered Architect, B.S., University of Illinois, 1939; 1974.
 STEWART, LUCY P., Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1964; 1963.

Journalism (College of Communications and Fine Arts)

ATWOOD, L. ERWIN, Associate Professor, Ph.D., University of Iowa, 1965; 1967.
 BROWN, GEORGE C., Professor and Director, Ph.D., Southern Illinois University, 1963; 1956.
 CHU, GODWIN C., Professor, Ph.D., Stanford University, 1964; 1970.
 CLAYTON, CHARLES C., Professor, *Emeritus*, B.J., University of Missouri, 1925; 1955.
 COMBS, ADRIAN, Lecturer, B.A., Texas Technological University, 1954; 1971.
 CROW, WENDELL C., Instructor, M.S., Southern Illinois University, 1972; 1969.
 DELANEY, JANE P., Assistant, B.J., University of Missouri, 1957; 1970.
 FORD, JAMES L. C., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948; 1955.
 FRAZER, MARY K., Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1965; 1965.
 GRUNY, C. RICHARD, Assistant Professor, J.D., University of Illinois, 1959; 1959.
 HARMON, WILLIAM M., Instructor, M.S., Oklahoma State University, 1965; 1969.
 HART, JIM ALLEE, Professor, Ph.D., University of Missouri, 1959; 1965.
 JOHNSON, RALPH H., Instructor, M.A., University of Minnesota, 1956; 1973.
 LONG, HOWARD R., Professor, *Emeritus*, Ph.D., University of Missouri, 1948; 1953.
 LORIMOR, E. S., Assistant Professor, Ph.D., University of Wisconsin, 1966; 1974.

LYONS, WILLIAM H., Assistant Professor, *Emeritus*, M.A., University of Colorado, 1935; 1951.
 MCCOY, RALPH E., Professor, Ph.D., University of Illinois, 1956; 1955.
 MENDENHALL, HARLAN H., Lecturer, B.A., University of Oklahoma, 1937; 1967.
 MORGAN, HUGH J., Instructor, M.A., University of Oklahoma, 1967; 1974.
 NELSON, SANDRA K., Assistant Instructor, B.A., University of Minnesota, 1971; 1974.
 RICE, W. MANION, Associate Professor, Ph.D., Southern Illinois University, 1967; 1959.
 STONECIPHER, HARRY W., Assistant Professor, Ph.D., Southern Illinois University, 1971; 1969.
 TRAGER, ROBERT E., Assistant Professor, Ph.D., University of Minnesota, 1972; 1973.
 WOOD, THOMAS W., Associate Professor, Ph.D., University of Oklahoma, 1966; 1973.

Linguistics (College of Liberal Arts)

BRUTTEN, SHEILA, Instructor, M.S.Ed., Southern Illinois University, 1965; 1968.
 CARRELL, PATRICIA L., Associate Professor and *Chairperson*, Ph.D., University of Texas at Austin, 1966; 1968.
 COLEMAN, RONALD, Instructor, M.A., Southern Illinois University, 1969; 1969.
 DAESCH, RICHARD L., Instructor, M.S.Ed., Southern Illinois University, 1970; 1966.
 GILBERT, GLENN G., Associate Professor, Ph.D., Harvard University, 1963; 1970.
 KONNEKER, BEVERLY HILL, Assistant Professor, Ph.D., University of Texas at Austin, 1972; 1969.
 MORRIS, ALICE O., Instructor, M.A., University of Kentucky, 1949; 1967.
 NGUYEN, DINH-HOA, Professor, Ph.D., New York University, 1956; 1969.
 PARISH, CHARLES, Professor, Ph.D., University of New Mexico, 1959; 1965.
 PHARIS, KEITH E., Instructor, M.A., Southern Illinois University, 1969; 1966.
 REDDEN, JAMES E., Professor, Ph.D., Indiana University, 1965; 1967.
 SILVERSTEIN, RAYMOND O., Assistant Professor, Ph.D., University of California at Los Angeles, 1973; 1970.
 SNOW, JOSEPHINE B., Instructor, M.A., Southern Illinois University, 1968; 1969.

Marketing (College of Business and Administration)

ADAMS, KENDALL A., Professor, Ph.D., Michigan State University, 1962; 1965.
 ANDERSEN, R. CLIFTON, Professor, D.B.A., Indiana University, 1960; 1967.
 DOMMERMUTH, WILLIAM P., Professor and *Chairman*, Ph.D., Northwestern University, 1964; 1968.
 DREVS, ROBERT A., Instructor, M.B.A., Northwestern University, 1967; 1973.
 DURAND, RICHARD M., Instructor, M.B.A., University of Florida, 1970; 1974.
 HINDERSMAN, CHARLES H., Professor, D.B.A., Indiana University, 1959; 1960.
 MOORE, JAMES R., Assistant Professor, Ph.D., University of Illinois, 1972; 1969.
 PERRY, DONALD L., Associate Professor, Ph.D., University of Illinois, 1966; 1964.
 ROSENBERGER, CHARLES E., Assistant Professor, M.B.A., Indiana University, 1954; 1956.

Mathematics (College of Liberal Arts)

ARTEMIADIS, NICOLAS, Professor, D.Sc., University of Paris (Sorbonne), 1957; 1966.
 BAARTMANS, ALPHONSE H., Assistant Professor, Ph.D., Michigan State University, 1967; 1967.
 BECKEMEYER, IMOGENE C., Assistant Professor, M.A., Southern Illinois University, 1952; 1951.
 BIESTERFELDT, HERMAN, Associate Professor, Ph.D., Pennsylvania State University, 1963; 1968.
 BLACK, AMOS H., Professor, *Emeritus*, Ph.D., Cornell University, 1932; 1948.
 BOUWSMA, WARD, Associate Professor, Ph.D., University of Michigan, 1962; 1967.
 BURTON, THEODORE A., Professor, Ph.D., Washington State University, 1964; 1966.
 CRENSHAW, JAMES A., Assistant Professor, Ph.D., University of Illinois, 1967; 1967.
 DANHOF, KENNETH, Assistant Professor, Ph.D., Purdue University, 1969; 1969.
 ELSTON, GEORGE, Instructor, M.S., University of Wisconsin, 1949; 1954.
 FOLAND, NEAL E., Professor and *Chairman*, Ph.D., University of Missouri, 1961; 1965.
 GATES, LESLIE D., Associate Professor, Ph.D., Iowa State University, 1952; 1961.
 GREGORY, JOHN, Assistant Professor, Ph.D., University of California at Los Angeles, 1969; 1972.
 GRIMMER, RONALD C., Associate Professor, Ph.D., University of Iowa, 1967; 1967.
 HALL, DILLA, Associate Professor, *Emeritus*, Ph.D., St. Louis University, 1955; 1924.
 HOOKER, JOHN W., Assistant Professor, Ph.D., University of Oklahoma, 1967; 1967.
 HUNSAKER, WORTHEN N., Associate Professor, Ph.D., Washington State University, 1966; 1969.

KAMMLER, DAVID, Associate Professor, Ph.D., University of Michigan, 1971; 1971.
 KIRK, RONALD B., Associate Professor, Ph.D., California Institute of Technology, 1968; 1968.
 KOCH, CHARLES, Assistant Professor, Ph.D., University of Illinois, 1961; 1966.
 KUIPERS, LAUWERENS, Professor, Ph.D., Vrije Universiteit (Amsterdam), 1947; 1966.
 LANGENHOP, CARL E., Professor, Ph.D., Iowa State University, 1948; 1961.
 MARK, ABRAHAM M., Professor, Ph.D., Cornell University, 1947; 1950.
 MAXWELL, CHARLES, Professor, Ph.D., University of Illinois, 1955; 1963.
 McDANIEL, WILBUR C., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1939; 1939.
 MILLMAN, RICHARD, Associate Professor, Ph.D., Cornell University, 1971; 1971.
 MOORE, ROBERT A., Associate Professor, Ph.D., Indiana University, 1962; 1965.
 NATHANSON, MELVYN B., Assistant Professor, Ph.D., University of Rochester, 1971; 1971.
 NIEDERREITER, HARALD, Associate Professor, Ph.D., University of Vienna, 1969; 1969.
 OLMSTED, JOHN M. H., Professor, Ph.D., Princeton University, 1940; 1960.
 PAINE, THOMAS B., Assistant Professor, Ph.D., University of Oregon, 1966; 1966.
 PANCHAPAKESAN, S., Associate Professor, Ph.D., Purdue University, 1969; 1970.
 PARKER, GEORGE D., Assistant Professor, Ph.D., University of California, at San Diego, 1971; 1972.
 PATULA, WILLIAM T., Assistant Professor, Ph.D., Carnegie-Mellon University, 1972; 1972.
 PEDERSEN, FRANKLIN D., Assistant Professor, Ph.D., Tulane University, 1967; 1965.
 PEDERSEN, KATHERINE, Assistant Professor, Ph.D., Tulane University, 1969; 1965.
 SELDIN, JONATHAN P., Assistant Professor, Ph.D., University of Amsterdam, 1968; 1969.
 SHOCK, ROBERT C., Associate Professor, Ph.D., University of North Carolina, 1969; 1969.
 SKALSKY, MICHAEL, Professor, D.Nat.Sc., University of Göttingen, 1949; 1957.
 SLECHTICKY, JAMES L., Instructor, *Emeritus*, M.S., Washington University, 1940; 1958.
 SNYDER, HERBERT H., Professor, Ph.D., Lehigh University, 1965, Ph.D., University of South Africa, 1972; 1966.
 STARKS, THOMAS H., Associate Professor, Ph.D., Virginia Polytechnic Institute, 1959; 1961.
 TOWNSEND, CARL, Associate Professor, Ph.D., Washington State University, 1965; 1965.
 WILSON, JOSEPH C., Professor, Ph.D., Louisiana State University, 1954; 1957.
 WIMP, LARRY L., Assistant Professor, M.A., University of Missouri, 1940, M.S., Southern Illinois University, 1959; 1954.
 WRIGHT, ALICE K., Assistant Professor, *Emerita*, M.A., University of Illinois, 1925; 1925.

Microbiology (College of Science)

CASTER, JOHN, Assistant Professor, Ph.D., St. Louis University, 1968; 1972.
 GILMORE, R. A., Assistant Professor, Ph.D., University of California at Berkeley, 1966; 1968.
 JACKSON, ROBERT, Associate Professor, Ph.D., Purdue University, 1963; 1974.
 LINDEGREN, CARL C., Professor, *Emeritus*, Ph.D., California Institute of Technology, 1931; 1948.
 McCLARY, DAN O., Professor, Ph.D., Washington University, 1951; 1951.
 OGUR, MAURICE, Professor and *Chairman*, Ph.D., Columbia University, 1948; 1953.
 ROUHANDEH, HASSAN, Professor, Ph.D., Kansas State University, 1959; 1967.
 SHECHMEISTER, ISAAC L., Professor, Ph.D., University of California at Berkeley, 1949; 1957.

Music (College of Communications and Fine Arts)

BARWICK, STEVEN, Professor, Ph.D., Harvard University, 1949; 1955.
 BATEMAN, MARIANNE WEBB, M.Mus, University of Michigan, 1959; 1965.
 BERGT, ROBERT, Associate Professor, S.T.M., Concordia Seminary, 1958; 1974.
 BOE, JOHN, Associate Professor, Northwestern University, 1969; 1971.
 BOTTJE, WILL GAY, Professor, A.Mus.D., Eastman School of Music, 1955; 1957.
 DAUGHERTY, ELZA, M.A., University of North Dakota, 1968; 1972.
 DENKER, FRED, Professor, *Emeritus*, Ph.D., Eastman School of Music, 1951; 1957.
 EDDINS, JOHN, Assistant Professor, Ph.D., Florida State University, 1966; 1969.

- FLOYD, SAMUEL, Associate Professor, Ph.D., Southern Illinois University, 1969; 1968.
 FRANKLIN, LARRY L., Instructor, M.Mus., Southern Illinois University, 1966; 1971.
 GORDON, RODERICK, Professor, Ph.D., University of Wisconsin, 1953; 1963.
 GRIZZELL, MARY JANE, Assistant Professor, M.Mus., Eastman School of Music, 1943; 1959.
 HANES, MICHAEL, Assistant Professor, M.M.E., Southern Illinois University, 1965; 1970.
 HARTLINE, ELISABETH, Assistant Professor, *Emerita*, M.Mus., Northwestern University, 1936; 1953.
 HOUSE, ROBERT, Professor and *Director*, Ed.D., University of Illinois, 1954; 1967.
 HUSSEY, GEORGE, Associate Professor, M.A. Ed., Washington University, 1963; 1963.
 KAGEFF, BURT, Assistant Professor, A.M., University of Missouri, 1962; 1969.
 KINGSBURY, ROBERT, Associate Professor, M.Mus., Northwestern University, 1952; 1961.
 KOENIGSTEIN, NICHOLAS, Assistant Professor, M.Mus., West Virginia University, 1956; 1967.
 LAWRENCE, MARJORIE, Professor, *Emerita*; 1960.
 LEMASTERS, DONALD, Instructor, M.Mus., Northwestern University, 1949; 1967.
 MACCHIA, SALVATORE, Instructor, M.M.A., Yale University, 1973; 1974.
 MARVIN, MARAJEAN, Instructor, M.Mus., University of Maryland, 1973; 1973.
 McHUGH, CATHERINE, Professor, Ed.D., Columbia University, 1959; 1969.
 McINTOSH, DAVID, Associate Professor, *Emeritus*, M.A., University of Iowa, 1935; 1927.
 MUELLER, ROBERT, Professor, Ph.D., Indiana University, 1954; 1948.
 NADAF, GEORGE, Assistant Professor, M.Mus., Manhattan School of Music, 1956; 1965.
 OLDFIELD, MARJORIE FRAZEE, Instructor, M.Mus., University of Texas, 1969; 1970.
 OLDFIELD, W. ALAN, Associate Professor, Ph.D., North Texas State University, 1969; 1969.
 OLSSON, PHILLIP, Professor, M.Mus., Chicago Conservatory, 1949; 1949.
 POULOS, HELEN, Assistant Professor, D.M., Indiana University, 1971; 1969.
 PRESSLEY, DAN, Assistant Professor, M.Mus., University of Michigan, 1969; 1971.
 RESNICK, ROBERT, Professor, M.Mus., Wichita State University, 1949; 1949.
 RIDDLES, DAVID, Instructor, M.Mus., Indiana University, 1973; 1973.
 SCAMMON, JOHN, Instructor, M.Mus., California State University, Northridge, 1973; 1973.
 SIENER, MELVIN, Associate Professor, M.A., University of Iowa, 1954; 1962.
 STIMAN, HAROLD EUGENE, Assistant Professor, M.S., University of Illinois, 1957; 1965.
 TAYLOR, CHARLES, Associate Professor, Ed.D., Columbia University, 1950; 1957.
 UNDERWOOD, JERVIS, Associate Professor, Ph.D., North Texas State University, 1970, 1971.
 VOGLER, HELEN M., Instructor, *Emerita*, 1920.
 WALLACE, MARY ELAINE, Associate Professor, M.Mus. University of Illinois, 1954; 1969.
 WERNER, KENT, Associate Professor, Ph.D., University of Iowa, 1966; 1963.
 WHARTON, JOHN, Associate Professor, *Emeritus*, M.Mus., American Conservatory, 1940; 1945.

Occupational Education (College of Education)

- BAILEY, LARRY J., Associate Professor, Ed.D., University of Illinois, 1968; 1969.
 BITTLE, R. E., Professor, Ed.D., University of Florida, 1956; 1969.
 BORTZ, RICHARD F., Associate Professor, Ph.D., University of Minnesota, 1967; 1967.
 BUILA, THEODORE, Assistant Professor, Ph.D., Cornell University, 1968; 1968.
 DUNNING, E. LEON, Professor, Ph.D., University of Houston, 1967; 1957.
 ERICKSON, JOHN H., Professor, Ed.D., Pennsylvania State University, 1953; 1955.
 GALLINGTON, RALPH O., Professor, *Emeritus*, Ed.D., George Washington University, 1947; 1955.
 GOOCH, BILL G., Visiting Assistant Professor, Ed.D., University of Tennessee, 1973; 1973.
 HUCK, JOHN F., Assistant Professor, Ed.D., University of Illinois, 1973; 1970.
 JENKINS, JAMES, Associate Professor, Ed.D., Pennsylvania State University, 1955; 1956.
 KLEHM, MERWYN A., Visiting Assistant Professor, Ph.D., Ohio State University, 1974; 1974.
 KOWALKA, RONALD C., Visiting Assistant Professor, Ph.D., Ohio State University, 1974; 1974.

- LEMSER, THEODORE A., Visiting Assistant Professor, Ed.D., University of Arkansas, 1974; 1974.
- LITTLE, RICHARD L., Visiting Associate Professor, Ed.D., Arizona State University, 1968; 1973.
- LUPCHO, STEVE E., Visiting Assistant Professor, Ed.D., East Texas State University, 1974; 1974.
- MAUCH, ERNEST C., Visiting Assistant Professor, Ph.D., University of Maryland, 1973; 1974.
- McWARD, LARRY J., Visiting Assistant Professor, Ph.D., Ohio State University, 1974; 1974.
- RAMP, WAYNE S., Professor, Ed.D., Bradley University, 1956; 1957.
- RICE, CHARLES M., Visiting Professor, *Emeritus*, D.Ed., Oregon State University, 1958; 1967.
- ROBINSON, WILLIAM O., Visiting Assistant Professor, Ed.D., University of Arkansas, 1971; 1974.
- ROSENBERGER, MAXINE, Associate Professor, Ph.D., Southern Illinois University, 1970; 1973.
- SHIELDS, BILL J., Instructor, M.S.Ed., Southern Illinois University, 1963; 1962.
- SIEGNER, C. VERNON, Visiting Assistant Professor, Ed.D., Colorado State College, 1961; 1974.
- STADT, RONALD W., Professor, Ed.D., University of Illinois, 1962; 1967.
- SULLIVAN, JAMES A., Associate Professor, Ed.D., West Virginia University, 1967; 1968.
- SUTTON, W. CLYDE, Lecturer, M.S., Murray State University, 1973; 1974.
- WEISMAN, LAWRENCE, Assistant Professor, Ph.D., Florida State University, 1972; 1971.
- WESTBERG, WILLIAM C., Professor, Ph.D., Pennsylvania State University, 1948; 1952.
- WETZEL, N. RODNEY, Visiting Assistant Professor, D.Ed., University of Illinois, 1973; 1974.

Philosophy (College of Liberal Arts)

- AUDI, MICHAEL N., Associate Professor, Ph.D., Johns Hopkins University, 1970; 1970.
- CLARKE, DAVID S., JR., Associate Professor and *Chairman*, Ph.D., Emory University, 1964; 1966.
- DIEFENBECK, JAMES A., Professor, Ph.D., Harvard University, 1950; 1950.
- EAMES, ELIZABETH R., Professor, Ph.D., Bryn Mawr College, 1951; 1963.
- EAMES, S. MORRIS, Professor, Ph.D., University of Chicago, 1958; 1963.
- FRONDIZI, RISIERI, Professor, Ph.D., National University of Mexico, 1950; 1970.
- GILLAN, GARTH J., Associate Professor, Ph.D., Duquesne University, 1966; 1969.
- HAHN, LEWIS E., Research Professor, Ph.D., University of California, 1939; 1963.
- HAYWARD, JOHN, Professor, Ph.D., University of Chicago, 1949; 1968.
- HOWIE, JOHN, Associate Professor, Ph.D., Boston University, 1965; 1966.
- KELLY, MATTHEW J., Associate Professor, Ph.D., University of Notre Dame, 1963; 1966.
- LIU, SHU-HSIEN, Professor, Ph.D., Southern Illinois University, 1966; 1966.
- McCLURE, GEORGE T., Professor, Ph.D., Ohio State University, 1958; 1958.
- MIJUSKOVIC, BEN L., Assistant Professor, Ph.D., University of California at San Diego, 1972; 1972.
- MOORE, WILLIS, Professor, *Emeritus*, Ph.D., University of California, 1936; 1955.
- PLOCHMANN, GEORGE KIMBALL, Professor, Ph.D., University of Chicago, 1950; 1949.
- SCHEDLER, GEORGE, Assistant Professor, Ph.D., University of California at San Diego, 1973; 1973.
- SCHILPP, PAUL A., Visiting Professor, Ph.D., Stanford University, 1936; 1965.
- TENNEY, CHARLES, University Professor, *Emeritus*, Ph.D., University of Oregon, 1931; 1931.
- WIEMAN, HENRY N., Professor, *Emeritus*, Ph.D., Harvard University, 1917; 1956.

Physical Education for Men (College of Education)

- ACKERMAN, KENNETH, Assistant Professor, M.A., Michigan State University, 1959; 1969.
- BROWN, BILL, Instructor, M.Ed., University of Missouri, Columbia, 1946; 1957.
- CARROLL, PETER, Assistant Professor, Ph.D., Pennsylvania State University, 1970; 1969.
- ELLIS, WALTER, Instructor, M.S. Ed., Southern Illinois University, 1969; 1969.
- FRANKLIN, C. C. Assistant Professor, M.S. Ed., Indiana University, 1946; 1948.

GOOD, LARRY, Associate Professor, Ed.D., Temple University, 1968; 1967.
 GREENE, NORMAN, Assistant Professor, M.S. Ed., Southern Illinois University, 1961; 1957.
 HARTZOG, LEWIS, Instructor, M.E., Colorado State University, 1954; 1960.
 HOLDER, LYNN, Assistant Professor, M.S. Ed., Indiana University, 1940; 1946.
 KNOWLTON, RONALD, Professor, Ph.D., University of Illinois, 1961; 1961.
 LONG, LINN, Instructor, M.S., University of Colorado, 1967; 1968.
 MARTIN, GLENN, *Emeritus*, M.A., University of Iowa, 1938; 1938.
 MEADE, WILLIAM, Assistant Professor, M.A.Ed., University of North Carolina, 1950; 1956.
 OKITA, TED, Assistant Professor, M.A., Northwestern University, 1964; 1965.
 SHEA, EDWARD, Professor and *Chairman*, Ph.D., New York University, 1955; 1954.
 SPACKMAN, ROBERT, Associate Professor, M.S. Ed., Southern Illinois University, 1960, 1957.
 STOTLAR, JOHN, Associate Professor, D.P.Ed., Indiana University, 1954, 1948.
 WILKINSON, JAMES, Associate Professor, D.P.Ed., Indiana University, 1958; 1951.

Physical Education for Women (College of Education)

BLACKMAN, CLAUDIA J., Instructor, M.S.Ed., Southern Illinois University, 1968; 1968.
 BRECHTELSBAUER, KAY M., Instructor, M.S.Ed., Southern Illinois University, 1966; 1966.
 CATCHINGS, J. HOLLIDAY, Instructor, M.F.A., University of Hawaii, 1973; 1973.
 COTTEN, SARAH, Instructor, M.Ed., Miami University, 1965; 1964.
 DAVIES, DOROTHY R., Professor, *Emerita*, Ed.D., University of Cincinnati, 1944; 1939.
 FRANKLIN, MARCILE, Instructor, M.S.Ed., Indiana University, 1944; 1957.
 GORDON, LONNY J., Assistant Professor, M.F.A., University of Wisconsin, 1967; 1972.
 ILLNER, JULEE ANN, Instructor, M.S. Ed., Southern Illinois University, 1968; 1967.
 LE FEVERS, VICTORIA A., Assistant Professor, Ph.D., Texas Woman's University, 1971; 1974.
 LOGAN, MOIRA J., Instructor, M.F.A., Sarah Lawrence College, 1972; 1972.
 MUZZEY, DOROTHY, Assistant Professor, *Emerita*, M.A., University of Iowa, 1932; 1928.
 PARATORE, JEAN, Instructor, M.Ed., University of North Carolina, 1975; 1974.
 POTTER, MARJORIE BOND, Associate Professor, Ph.D., University of Southern California, 1958; 1961.
 STEHR, JEAN, Associate Professor, M.A., Texas Woman's University, 1945; 1944.
 THORPE, JO ANNE LEE, Professor and *Chairman*, Ph.D., Texas Woman's University, 1964; 1958.
 VOGEL, HERBERT L., Instructor, M.S.P.Ed., Indiana University, 1954; 1963.
 WEST, CHARLOTTE, Professor, Ph.D., University of Wisconsin, 1969; 1957.
 ZIMMERMAN, HELEN, Professor, *Emerita*, Ph.D., University of Wisconsin, 1951; 1952.

Physics and Astronomy (College of Science)

ARVIN, MARTIN J., Professor, *Emeritus*, Ph.D., University of Illinois, 1934; 1949.
 BORST, WALTER L., Assistant Professor, Ph.D., University of California, Berkeley, 1968; 1971.
 BOSE, SUBIR K., Associate Professor, Ph.D., University of Allahabad, India, 1967; 1968.
 BRASEFIELD, CHARLES J., Professor, *Emeritus*, Ph.D., Princeton University, 1927; 1954.
 CHANG-FANG, CHUEN-CHUEN, Assistant Professor, Ph.D., Duke University, 1962; 1966.
 CUTNELL, JOHN D., Assistant Professor, Ph.D., University of Wisconsin, 1967; 1968.
 GRUBER, BRUNO, J., Professor, Ph.D., University of Vienna, Austria, 1962; 1972.
 HENNEBERGER, WALTER C., Professor and *Chairman*, Ph.D., Göttingen University, Germany, 1959; 1963.
 JOHNSON KENNETH W., Associate Professor, Ph.D., Ohio State University, 1967; 1970.
 MARSHALL, LAURISTON C., Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1929; 1967.
 NICKELL, WILLIAM E., Professor, Ph.D., University of Iowa, 1954; 1963.
 SANDERS, FRANK C., JR., Assistant Professor, Ph.D., University of Texas, 1968; 1969.
 SAPOROSCHENKO, MYKOLA, Associate Professor, Ph.D., Washington University, 1958; 1965.
 WATSON, RICHARD E., Professor Ph.D., University of Illinois 1938; 1958.
 YOUNG, OTIS B., Professor, *Emeritus*, Ph.D., University of Illinois 1928; 1929.

ZIMMERSCHIED, CHARLOTTE, Assistant Professor, *Emerita*, A.M., University of Minnesota, 1923; 1927.

ZITTER, ROBERT N., Professor, Ph.D., University of Chicago, 1962; 1967.

Physiology (College of Science)

BANERJEE, CHANDRA M., Professor, Ph.D., Virginia Commonwealth University, 1967; 1974.

BORKON, ELI L., Adjunct Professor, M.D., University of Chicago, 1937; 1954.

BROWNING, RONALD A., Assistant Professor, Ph.D., University of Illinois, 1971; 1973.

DUNAGAN, TOMMY T., Professor, Ph.D., Purdue University, 1960; 1962.

FALVO, RICHARD E., Assistant Professor, Ph.D., University of Wyoming, 1970; 1973.

FOOTE, FLORENCE M., Professor, Ph.D., University of Iowa, 1940, 1963.

GASS, GEORGE H., Professor, Ph.D., Ohio State University, 1955; 1959.

KAPLAN, HAROLD M., Professor, Ph.D., Harvard University, 1933; 1949.

LEHR, ROBERT P., JR., Associate Professor, Professor, Ph.D., Baylor University, 1971; 1973.

MICKUS, JOHN R., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1974.

MILLER, DONALD M., Associate Professor, Ph.D., University of Illinois, 1965; 1966.

MIRANTI, JOSEPH P., Professor, M.D., Loyola University, 1950; 1961.

MORELAND, JAMES E., Professor, Ph.D., Louisiana State University, 1961; 1973.

MYERS, J. HURLEY, Assistant Professor, Ph.D., University of Tennessee, 1969; 1971.

NEQUIN, LYNN G., Assistant Professor, Ph.D., University of Illinois, 1970; 1973.

PARKE, WESLEY W., Professor, Ph.D., University of Connecticut, 1957; 1974.

RICHARDSON, ALFRED W., Professor, Ph.D., University of Iowa, 1949; 1966.

SOLLBERGER, ARNE, Associate Professor, M.D., Caroline Institute, Sweden, 1957, 1972.

STACY, RALPH W., Professor and *Chairman*, Ph.D., Ohio State University, 1948; 1972.

TAYLOR, GEORGE T., Assistant Professor, Ph.D., University of Massachusetts, 1969; 1973.

TIMMONS, EDWARD H., Associate Professor, D.V.M., University of Georgia, 1963; 1970.

WADE, DAVID R., Associate Professor, Ph.D., University of Cambridge, England, 1968; 1974.

YAU, WILLIAM M., Assistant Professor, Ph.D., Virginia Commonwealth University, 1971; 1973.

Plant and Soil Science (School of Agriculture)

CASTER, ALFRED B., Professor, *Emeritus*, Ph.D., University of Arizona, 1941; 1957.

COORTS, GERALD D., Professor and *Chairman*, Ph.D., University of Illinois, 1964; 1968.

ELKINS, DONALD M., Professor, Ph.D., Auburn University, 1967; 1967.

HILLYER, IRVIN G., Professor, Ph.D., Michigan State University, 1956; 1956.

JONES, JOE H., Associate Professor, Ph.D., Ohio State University, 1960; 1964.

KAPUSTA, GEORGE, Instructor, M.S., University of Minnesota, 1957; 1964.

LEASURE, J. K., Professor, Ph.D., University of Illinois, 1953; 1966.

MALEIKE, RAYMOND R., Assistant Professor, Ph.D., Virginia Polytechnic Institute, 1974; 1973.

MOWRY, JAMES B., Professor, Ph.D., Rutgers University, 1951; 1951.

MYERS, OVAL, JR., Associate Professor, Ph.D., Cornell University, 1963; 1968.

OLSEN, FARREL J., Associate Professor, Ph.D., Rutgers University, 1961; 1971.

PORTZ, HERBERT L., Professor, Ph.D., University of Illinois, 1954; 1954.

SATCHELL, DONALD P., Associate Professor, Ph.D., North Carolina State University, 1951; 1969.

STUCKY, DONALD J., Assistant Professor, Ph.D., Purdue University, 1963; 1970.

TUCKER, LOWELL R., Associate Professor, *Emeritus*, Ph.D., Massachusetts State College, 1940; 1947.

TWEEDY, JAMES A., Professor, Ph.D., Michigan State University, 1966; 1966.

VARSA, EDWARD C., Assistant Professor, Ph.D., Michigan State University, 1970, 1970.

Political Science (College of Liberal Arts)

ALEXANDER, ORVILLE, Professor, Ph.D., University of Iowa, 1936; 1938.

ARMOUR, MARY ANN, Instructor, M.A., University of Oklahoma, 1970; 1971.

BAKER, JOHN H., Associate Professor, Ph.D., Princeton University, 1961; 1966.

BHATTACHARYYA, JNANABROTA, Associate Professor, Ph.D., University of Delhi, India, 1969; 1968.

BIANCHI, RINO, Instructor, M.A., Southern Illinois University, 1961; 1960.
 CHOU, IKUA, Professor, Ph.D., Fletcher School of Law and Diplomacy, 1949; 1964.
 DALE, RICHARD, Associate Professor, Ph.D., Princeton University, 1962; 1966.
 DERGE, DAVID RICHARD, Professor, Ph.D., Northwestern University, 1955; 1972.
 ERVIN, OSBIN L., Assistant Professor, Ph.D., University of Tennessee, 1974; 1974.
 FLENTJE, H. EDWARD, Visiting Associate Professor, Ph.D., University of Kansas, 1970; 1972.
 GARNER, WILLIAM R., Associate Professor, Ph.D., Tulane University, 1963; 1966.
 GOODSELL, CHARLES T., Professor, Ph.D., Harvard University, 1961; 1966.
 HANSON, EARL THOMAS, Professor, Ph.D., University of Illinois, 1948; 1960.
 HARDENBERGH, WILLIAM, Professor, Ph.D., University of Illinois, 1954; 1960.
 ISAKOFF, JACK F., Professor, *Emeritus*, Ph.D., University of Illinois, 1937; 1962.
 JACKSON, JOHN S., III, Associate Professor, Ph.D., Vanderbilt University, 1971; 1969.
 JACOBINI, HORACE B., Professor, Ph.D., University of Kansas, 1951; 1957.
 KAMARASY, EGON K., Assistant Professor, Doctor Politices, Budapest University, Hungary, 1942; 1959.
 KENNEY, DAVID T., Professor, Ph.D., University of Illinois, 1952; 1951.
 KLINGBERG, FRANK L., Professor, Ph.D., University of Chicago, 1939; 1946.
 LANDECKER, MANFRED, Associate Professor, Ph.D., Johns Hopkins University, 1965; 1959.
 MACE, GEORGE R., Associate Professor, Ph.D., Claremont Graduate School, 1963; 1970.
 McGRATH, ROBERT A., Professor, Ph.D., University of Iowa, 1947; 1949.
 MILLER, ROY E., Assistant Professor, Ph.D., University of Illinois, 1971; 1967.
 MORRIS, MILTON D., Associate Professor, Ph.D., University of Maryland, 1970; 1970.
 MORTON, WARD M., Professor, *Emeritus*, Ph.D., University of Texas, 1941; 1949.
 NELSON, RANDALL H., Professor and *Chairman*, Ph.D., University of Michigan, 1956; 1955.
 PAINE, JOANN P., Associate Professor, Ph.D., University of Oregon, 1967; 1966.
 RIDGEWAY, MARIAN E., Professor, *Emerita*, Ph.D., University of Illinois, 1952; 1952.
 SAPPENFIELD, MAX M., Professor, *Emeritus*, Ph.D., University of Illinois, 1935; 1954.
 STAUBER, LELAND G., Associate Professor, Ph.D., Harvard University, 1964; 1966.
 TURLEY, WILLIAM S., Assistant Professor, Ph.D., University of Washington, 1972; 1971.
 TURNER, MAX W., Professor, Ph.D., University of Iowa, 1947; 1947.
 VAN DER SLIK, JACK, Associate Professor, Ph.D., Michigan State University, 1967; 1967.
 WASBY, STEPHEN L., Professor, Ph.D., University of Oregon, 1962; 1966.

President's Scholar Program

DOTSON, JOHN E., Director, Ph.D., Johns Hopkins University, 1969; 1970

Professional Education Experiences (College of Education)

BENCINI, E. L., Assistant Professor, *Emeritus*, M.S., University of Missouri, 1942; 1955.
 BOYKIN, ARSENE O., Associate Professor, Ed.D., University of Illinois, 1964; 1972.
 BRADFIELD, JOYCE M., Instructor, M.A., George Peabody College for Teachers, 1946; 1960.
 BROWN, BILL, Instructor, M.Ed., University of Missouri, 1946; 1957.
 BUSER, MARGARET, Instructor, M.S.Ed., Indiana University, 1966; 1967.
 CARTER, CLEO D., Associate Professor, *Emerita*, Ed.D., Indiana University, 1958; 1959.
 CASEY, JOHN P., Professor, Ed.D., Indiana University, 1963; 1964.
 DeWEESE, JEWELL, Instructor, M.S.Ed., Southern Illinois University, 1971; 1974.
 DIXON, BILLY G., Associate Professor and *Chairman*, Ph.D., Southern Illinois University, 1967; 1961.
 FULTS, ANNA CAROL, Professor, Ph.D., Ohio State University, 1946; 1952.
 KING, JOSEPH H., Assistant Professor, Ed.D., University of Illinois, 1971; 1970.
 LIPSEY, WILLIAM, Lecturer, Ed.D., Northwestern University, 1952; 1967.
 MATTHIAS, WILLIAM, Associate Professor, Ed.D., University of Illinois, 1964; 1967.
 MEEHAN, ELIZABETH C., Lecturer, *Emerita*, M.A., University of Illinois, 1940; 1936.
 MEYER, EDRA T., Instructor, *Emerita*, M.S., Southern Illinois University, 1956; 1955.
 MOORE, ERYN E., Instructor, M.S., Tennessee State University, 1963; 1969.
 POPE, CEDRIC A., Assistant Professor, Ed.D., University of Northern Colorado, 1959; 1967.
 QUISENBERRY, JAMES D., Assistant Professor, Ph.D., Indiana University, 1972; 1971.
 RAHE, HARVES, Professor, Ed.D., Indiana University, 1950; 1950.
 SEIFERTH, BERNIECE, Associate Professor, Ed.D., University of Missouri, 1955; 1955.
 SHELTON, H. VIVIAN, Instructor, M.S.Ed., Southern Illinois University, 1965; 1965.

SOLLIDAY, MIKE, Instructor, M.A., Southern Illinois University, 1964; 1967.
 STOTLAR, JOHN W., Associate Professor, D.P. Ed., Indiana University, 1954; 1948.
 TREECE, MADELYN, Assistant Professor, *Emerita*, M.A., University of Chicago, 1936; 1940.
 WOOD, RUTH B., Instructor, A.M., University of Illinois, 1948; 1958.

Psychology (College of Liberal Arts)

APPEL, ANTOINETTE R., Assistant Professor, Ph.D., City University of New York, 1972; 1974.
 BAEZ, LUIS A., Assistant Professor, Ph.D., Princeton University, 1973; 1974.
 BEKKER, L. DEMOYNE, Associate Professor, Ph.D., Ohio State University, 1968; 1969.
 BRUTTEN, GENE J., Professor, Ph.D., University of Illinois, 1957; 1957.
 BUCK, TERENCE D., Associate Professor, Ph.D., University of Missouri, 1968; 1969.
 CARRIER, NEIL A., Professor, Ph.D., University of Michigan, 1956; 1957.
 DELANEY, H. RICHARD, Associate Professor, Ph.D., University of Missouri, 1967; 1969.
 DEPUE, RICHARD A., Assistant Professor, Ph.D., University of Oklahoma, 1971; 1972.
 DUNAGAN, SHIRLEY S., Instructor, M.S., University of Tennessee, 1954; 1968.
 EHRENFREUND, DAVID, Professor and *Chairman*, Ph.D., State University of Iowa, 1947; 1962.
 GRAHAM, JACK W., Professor, Ph.D., Purdue University, 1951; 1951.
 HARRIN, VINCENT A., Professor, Ph.D., University of Texas, 1964; 1968.
 KELLEY, NOBLE H., Professor, *Emeritus*, Ph.D., State University of Iowa, 1936; 1951.
 LEVITT, ROBERT A., Professor, Ph.D., University of Florida, 1965; 1967.
 LIT, ALFRED, Professor, Ph.D., Columbia University, 1948; 1961.
 McHOSE, JAMES H., Professor, Ph.D., University of Iowa, 1961; 1961.
 McKILLIP, JOHN A., Assistant Professor, Ph.D., Loyola University of Chicago, 1975; 1974.
 McNEEL, STEVEN P., Assistant Professor, Ph.D., University of California, Santa Barbara, 1969; 1970.
 MELTZER, DONALD, Associate Professor, Ph.D., University of Pittsburgh, 1963; 1966.
 MILLER, H. RICHARD, Associate Professor, Ph.D., University of Missouri, 1967; 1973.
 MITCHELL, THOMAS O., Associate Professor, Ph.D., University of Colorado, 1969; 1968.
 MOLFESSE, DENNIS S., Assistant Professor, Ph.D., Pennsylvania State University, 1972; 1972.
 MOLFESSE, VICTORIA J., Assistant Professor, Ph.D., Pennsylvania State University, 1974; 1972.
 MORELAND, JOHN R., Assistant Professor, Ph.D., University of Massachusetts, 1971; 1973.
 O'DONNELL, JAMES P., Associate Professor, Ph.D., University of Pittsburgh, 1965; 1965.
 PITZ, GORDON F., Professor, Ph.D., Carnegie-Mellon University, 1963; 1963.
 PURCELL, THOMAS D., Associate Professor, Ph.D., Southern Illinois University, 1965; 1960.
 RADER, GORDON E., Professor, Ph.D., Yale University, 1956; 1968.
 RADTKE, ROBERT C., Associate Professor, Ph.D., State University of Iowa, 1963; 1966.
 RAFFERTY, JANET E., Professor, Ph.D., Ohio State University, 1952; 1954.
 RAMANAIAH, NERELLA, Assistant Professor, Ph.D., University of Oregon, 1971; 1971.
 RASCHE, LOIS M., Assistant Professor, Ph.D., University of Texas, 1969; 1971.
 RASCHE, RICHARD W., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1971.
 RIMM, DAVID C., Associate Professor, Ph.D., Stanford University, 1965; 1971.
 RINGUETTE, EUGENE L., Associate Professor, Ph.D., Purdue University, 1963; 1967.
 SCHILL, THOMAS R., Professor, Ph.D., Oklahoma State University, 1963; 1963.
 SCHMECK, RONALD R., Associate Professor, Ph.D., Ohio University, 1969; 1969.
 SHOEMAKER, DONALD J., Professor, Ph.D., Ohio State University, 1955; 1960.
 SNYDER, JOHN F., Associate Professor, Ph.D., Loyola University, 1965; 1968.
 SOMERVILL, JOHN W., Associate Professor, Ph.D., University of Arkansas, 1970; 1969.
 TINSLEY, HOWARD E. A., Assistant Professor, Ph.D., University of Minnesota, 1971; 1973.
 VOLLMER, WILLIAM P., Adjunct Instructor, M.S., Southern Illinois University, 1969; 1971.
 WESTBERG, WILLIAM C., Professor, Ph.D., Pennsylvania State University, 1948; 1952.
 WENDT, RACHEL, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1966; 1964.

Radio-Television (College of Communications and Fine Arts)

BROWN, WILLIAM EDWARD, Assistant Professor, M.S., Southern Illinois University, 1974; 1967.
 CRISWELL, WILLIAM, Lecturer, B.S.J., West Virginia University, 1950; 1971.
 DYBVIG, HOMER E., Associate Professor, Ph.D., Southern Illinois University, 1970; 1961.
 HILDRETH, RICHARD, Instructor, M.S., Syracuse University, 1968; 1968.
 HOLMAN, NEIL, Lecturer, M.S., CUNY, Brooklyn College, 1974; 1974.
 KURTZ, JOHN L., Assistant Professor, Ph.D., Southern Illinois University, 1973; 1962.
 LYNCH, CHARLES T., Associate Professor and *Chairman*, Ph.D., Southern Illinois University, 1972; 1967.
 NORWOOD, DONALD, Assistant Professor, M.A., Louisiana State University, 1962; M.A., West Virginia University, 1966; 1971.
 OGLESBEE, FRANK W., Assistant Professor, Ph.D., University of Missouri, 1969; 1971.
 OLSON, THOMAS O., Associate Professor, Ph.D., Wayne State University, 1966; 1971.
 ROBBINS, BUREN C., Associate Professor, *Emeritus*, M.A., University of Iowa, 1935; 1949.
 ROCHELLE, DAVID, Instructor, B.F.A., University of Houston, 1956; 1961.
 SHIPLEY, CHARLES W., Professor, Ph.D., Florida State University, 1971; 1971.
 TERWISCHE, DAVID K., Assistant Professor, Ph.D., University of Missouri, 1971; 1970.
 WALKER, MYERS, Instructor, M.F.A., Southern Illinois University, 1971; 1963.
 WITWER, JOSEPH C., Assistant, B.S., Southern Illinois University, 1970; 1970.

Recreation (College of Education)

ABERNATHY, WILLIAM, Assistant Professor, M.S.Ed., Southern Illinois University, 1963; 1964.
 FREEBERG, WILLIAM, Professor, D. Rec., Indiana University, 1950; 1942.
 O'BRIEN, WILLIAM, Professor and *Chairman*, D. Rec., Indiana University, 1967; 1948.
 SMITH, S. HAROLD, Instructor, M.S.P.Ed., University of Washington, 1968; 1974.
 TAYLOR, LOREN, Professor, Ed.D. Columbia University, 1957; 1957.

Rehabilitation Institute (College of Human Resources)

ALLEN, HARRY A., Associate Professor, Ed.D., University of Arkansas, 1971; 1970.
 AZRIN, NATHAN H., Professor, Ph.D., Harvard University, 1956; 1965.
 AZRIN, VICTORIA B., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1972; 1973.
 BENDER, ELEANOR G., Assistant Professor, M.S., Southern Illinois University, 1962; 1961.
 BRADSHAW, HARLEY E., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1967.
 BRYSON, SEYMOUR L., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1969.
 CAMPBELL, ROBERT L., Associate Professor, Ph.D., University of Alabama, 1967; 1966.
 COYLE, LENNICE L., Adjunct Instructor, M.A., Southern Illinois University, 1971; 1971.
 CUVO, ANTHONY J., Assistant Professor, Ph.D., University of Connecticut, 1973; 1973.
 DALY, WILLIAM C., Adjunct Professor, Ed.D., Case Western Reserve University, 1964; 1967.
 DICKEY, THOMAS W., Assistant Professor, M.A., Southern Illinois University, 1964; 1964.
 EDELMAN, JORDAN, Adjunct Professor, Ph.D., Washington University, 1958; 1973.
 FOXX, RICHARD M., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1972; 1973.
 GARDNER, MARGARET S., Associate Professor, Ph.D., Northwestern University, 1960; 1968.
 GELLMAN, WILLIAM M., Adjunct Professor, Ph.D., University of Chicago, 1955; 1964.
 GIDEON, CHARLES E., Adjunct Instructor, M.S., Southern Illinois University, 1965; 1974.
 GRENFELL, JOHN E., Professor, Ed.D., Oregon State University, 1966; 1966.
 GRODER, MARTIN G., Adjunct Professor, M.D., Columbia University, 1964; 1971.
 GRUENDEL, GEORGE, Adjunct Instructor, M.A., Northeast Missouri State University, 1962; 1969.
 HAKE, DON F., Adjunct Professor, Ph.D., Southern Illinois University, 1963; 1966.
 HAWLEY, IRENE B., Assistant Professor, Ph.D., Southern Illinois University, 1973; 1972.

KOLBER, PHILLIP, Adjunct Instructor, M.A., Teachers College, Columbia University, 1952; 1967.
 LEE, ROBERT E., Associate Professor, Ph.D., University of Minnesota, 1964; 1964.
 LORENZ, JEROME R., Assistant Professor, Ph.D., University of Wisconsin, 1973; 1973.
 LYLE, WILLIAM, Adjunct Professor, Ph.D., Ohio State University, 1953; 1966.
 MAGERS, GEORGE, Adjunct Instructor, M.S.E., University of Illinois, 1946; 1966.
 McDONALD, A. ANDREW, SR., Instructor, M.S., University of Wisconsin, Stout, 1969; 1974.
 MIRANTI, JOSEPH P., Professor, M.D., Loyola University, 1950; 1961.
 POPPEN, ROGER L., Associate Professor, Ph.D., Stanford University, 1968; 1970.
 RANDOLPH, JOHN J., Adjunct Associate Professor, Ph.D., University of Alabama, 1966; 1974.
 RENZAGLIA, GUY A., Professor and *Director*, Ph.D., University of Minnesota, 1952; 1955.
 ROBINSON, WALTER G., Assistant Professor, M.S., University of Missouri, 1966; 1968.
 RUBIN HARRIS B., Associate Professor, Ph.D., University of Chicago, 1965; 1966.
 RUSHING PHILLIP D., Adjunct Instructor, M.S.W., Washington University, 1960; 1968.
 SANDERS, RICHARD M., Professor, Ph.D., University of North Carolina, 1966; 1966.
 SCHUMACHER, BROCKMAN, Associate Professor, Ph.D., Washington University, 1969; 1967.
 SHAFTER, ALBERT J., Adjunct Professor, Ph.D., Iowa State University, 1953; 1966.
 SINGH, SILAS P., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1972.
 SLICER, ALFRED, Adjunct Professor, M.A., Northwestern University, 1950; 1962.
 TELLERMAN, HENRY H., Adjunct Instructor, M.Ed., University of Illinois, 1956; 1964.
 VIECELI, LOUIS, Assistant Professor, M.S. Ed., Southern Illinois University, 1959; 1958.

Religious Studies (College of Liberal Arts)

BENGTSON, DALE R., Assistant Professor, Ph.D., Hartford Seminary Foundation, 1971; 1973.
 HAYWARD, JOHN F., Professor and *Director*, Ph.D., University of Chicago, 1949; 1968.
 HUTCH, RICHARD A., Assistant Professor, Ph.D., University of Chicago, 1974; 1974.
 LEMERT, CHARLES C., Assistant Professor, Ph.D., Harvard University, 1972; 1971.

Secondary Education (College of Education)

AIKMAN, ARTHUR L., Associate Professor, Ph.D., Southern Illinois University, 1965; 1964.
 ALSTON, MELVIN O., Professor, Ed.D., Columbia University, 1945; 1970.
 BEASLEY, JOHN B., Assistant Professor, Ph.D., Ball State University, 1972; 1972.
 BUSER, ROBERT L., Professor, Ed.D., Indiana University, 1966; 1967.
 DEJARNETT, RAYMOND, Associate Professor, Ph.D., Southern Illinois University, 1964; 1960.
 DIXON, BILLY G., Associate Professor, Ph.D., Southern Illinois University, 1967; 1961.
 DUFF, GRACE H., Assistant Professor, Ph.D., Southern Illinois University, 1970; 1974.
 DUSENBERY, MIRIAM C., Professor, Ph.D., University of Iowa, 1964; 1968.
 DYKHOUSE, CLAUDE J., Professor, *Emeritus*, Ph.D., University of Michigan, 1947; 1947.
 EDWARDS, TROY W., Professor, Ed.D., Indiana University, 1954; 1947.
 FLIGOR, ROSS J., Professor, *Emeritus*, Ph.D., Michigan State University, 1953; 1940.
 JACKSON, MICHAEL R., Associate Professor, Ed.D., University of Florida, 1971, 1971.
 KEEFER, DARYLE E., Professor, *Emeritus*, Ph.D., Northwestern University, 1946; 1964.
 LONG, RUTH A., Assistant Professor, Ed.D., Indiana University, 1972; 1970.
 MEES, JOHN D., Professor, *Emeritus*, Ed.D., Indiana University, 1950; 1946.
 MILLER, HARRY G., Associate Professor and *Chairman*, Ed.D., University of Nebraska, 1970; 1970.
 SAMFORD, CLARENCE, Professor, *Emeritus*, Ph.D., New York University, 1940; 1951.
 STEPHENS, CLARENCE, Professor, *Emeritus*, Ed.D., Indiana University, 1955; 1952.
 YEANY, RUSSELL H., JR., Assistant Professor, Ph.D., University of Colorado, 1974; 1974.

Social Welfare Program (College of Human Resources)

AUERBACH, ARNOLD J., Professor and *Director*, Ph.D., University of Pittsburgh, 1961; 1972.
 BRELJE, MARTHA BROSE, Assistant Professor, A.M., Indiana University, 1963; 1967.
 BROWN, FOSTER S., JR., Instructor, M.S.W., New York University, 1966; 1969.

BROWN, TALLON, Assistant Professor, Ph.D., Southern Illinois University, 1973; 1973.
 DUNCAN, MINNA, Instructor, A.M., University of Chicago, 1949; 1974.
 HANDLER, EUGENIA, Instructor, M.S.W., University of Southern California, 1959; 1973.
 McDERMOTT, CAROL, Instructor, M.S.S.S., Boston University, 1951; 1966.
 O'NEIL, TREVIA, Instructor, M.S.W., University of Denver, 1967; 1974.
 ROBERTS, TERRENCE J., Instructor, M.S.W., University of California, Los Angeles, 1970; 1972.
 ROSEN ANITA L., Instructor, M.A., University of Chicago, 1969. 1971.

Sociology (College of Liberal Arts)

ALIX, ERNEST K., Associate Professor, Ph.D., Southern Illinois University, 1966; 1967.
 BOALT, GUNNAR, Adjunct Professor, Ph.D., University of Stockholm, 1947; 1967.
 BROOKS, MELVIN, Associate Professor, Ph.D., University of Wisconsin, 1941; 1956.
 BURGER, THOMAS, Assistant Professor, Ph.D., Duke University, 1972; 1973.
 EYNON, THOMAS G., Professor, Ph.D., Ohio State University, 1959; 1968.
 GASTON, JERRY C., Associate Professor, Ph.D., Yale University, 1969; 1969.
 HAWKES, ROLAND K., Associate Professor, Ph.D., Johns Hopkins University, 1967; 1970.
 HENDRIX, LEWELLYN, Assistant Professor, Ph.D., Princeton University, 1974; 1971.
 JOHNSON, ELMER H., Professor, Ph.D., University of Wisconsin, 1950; 1966.
 KULMAN, KENNETH, Instructor, B.A., Hunter College, 1963; 1972.
 LANTZ, HERMAN R., Professor, Ph.D., Ohio State University, 1950; 1950.
 LEMERT, CHARLES C., Assistant Professor, Ph.D., Harvard University, 1972; 1971.
 McGLYNN, EDWARD J., Assistant Professor, Ph.D., Cornell University, 1974; 1971.
 MEDDIN, JAY R., Assistant Professor, Ph.D., University of Kentucky, 1973; 1972.
 MUNCH, PETER A., Professor, Ph.D., University of Oslo, 1946; 1957.
 NALL, FRANK C., II, Associate Professor, Ph.D., Michigan State University, 1959; 1964.
 PATTERSON, EDGAR I., Instructor, M.A., University of Kansas, 1961; 1965.
 PETROFF, LOUIS, Associate Professor, *Emeritus*, Ph.D., University of Southern California, 1934; 1940.
 ROSSEL, ROBERT D., Associate Professor, Ph.D., Yale University, 1966; 1966.
 SNYDER, CHARLES R., Professor and *Chairman*, Ph.D., Yale University, 1954; 1960.

Special Education (College of Education)

BARRETT, CLAUDIA, Adjunct Assistant Professor, B.A., D'Youville College, 1970; 1974.
 BRECHT, RICHARD, Assistant Professor, Ed.D., University of Missouri, 1973; 1973.
 BREEN, EDWARD B., Instructor, M.A., University of New Mexico, 1966; 1971.
 BROWDER, JOHN, Adjunct Instructor, M.S., Southern Illinois University, 1972; 1974.
 CASEY, JOHN P., Professor, Ed.D., Indiana University, 1963; 1964.
 CROWNER, JAMES, Professor and *Chairman*, Ph.D., Michigan State University, 1960; 1966.
 EWING, NORMA J., Assistant Professor, Ph.D., Southern Illinois University, 1974; 1973.
 GILMORE, JOHN, Adjunct Instructor, M.S., Southern Illinois University, 1973; 1974.
 HISAMA, TOSHIKI, Visiting Assistant Professor, Ph.D., University of Oregon, 1971; 1971.
 JOHANN, DONNA JEAN, Adjunct Instructor, M.Ed., University of Illinois, 1974; 1974.
 JOINER, LEE M., Professor, Ph.D., Michigan State University, 1966; 1968.
 JUUL, KRISTEN D., Professor, Ed.D., Wayne State University, 1953; 1970.
 McKAY, ELIZABETH B., Associate Professor, *Emerita*, Ph.D., Syracuse University, 1952; 1952.
 MORGAN, HOWARD, Professor, Ed.D., Wayne State University, 1962; 1969.
 PALANDJIAN, KHATACHADOUR, Adjunct Professor, M.D., University of Rome Medical Schol, 1957; 1968.
 RAINEY, DAN, Assistant Professor, M.S.Ed., Southern Illinois University, 1956; 1957.
 SIMMONS, MARY BRITTON, Adjunct Instructor, M.S.Ed., Southern Illinois University, 1974; 1974.
 STEPHENS, WYATT E., Professor, Ph.D., University of Oklahoma, 1963; 1969.
 STONEBURNER, ROBERT L., Assistant Professor, Ph.D., University of Illinois, 1974; 1973.
 TESKA, JAMES A., Visiting Associate Professor, Ph.D., University of Illinois, 1969; 1973.

Speech (College of Communications and Fine Arts)

BRENIMAN, LESTER R., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1953; 1954.

FISH, ROBERT S., Assistant Professor, Ph.D., University of Oklahoma, 1970; 1970.
 GOODIEL, EUNICE B., Assistant Professor, *Emerita*, M.A., Northwestern University, 1941; 1956.
 HIBBS, R. P., Professor and *Chairman*, A.M., University of Wisconsin, 1942; 1965.
 HIGGINBOTHAM, DOROTHY, Professor, Ph.D., Northwestern University, 1961; 1964.
 KLEINAU, MARION L., Professor, Ph.D., University of Wisconsin, 1961; 1959.
 KLEINAU, MARVIN D., Assistant Professor, M.S. Ed., Illinois State University, 1960; 1963.
 LANIGAN, RICHARD L., Assistant Professor, Ph.D., Southern Illinois University, 1969; 1974.
 McCAULIFF, MARY LOU, Assistant Professor, Ph.D., University of Kansas, 1974; 1973.
 McHUGHES, JANET LARSEN, Assistant Professor, Ph.D., Northwestern University, 1972; 1973.
 MEDLEY, WILLIAM L., Instructor, M.A., University of Iowa, 1965; 1974.
 MICKEN, RALPH A., Professor, *Emeritus*, Ph.D., Northwestern University, 1948; 1957.
 NORWOOD, ELIZABETH, Assistant Professor, Ed.D., West Virginia University, 1973; 1972.
 PACE, THOMAS J., Professor, Ph.D., University of Denver, 1957; 1965.
 POTTER, DAVID J., Professor, Ph.D., Columbia University, 1943; 1960.
 SANDERS, KEITH R., Associate Professor, Ph.D., University of Pittsburgh, 1968; 1967.
 SMITH, WILLIAM D., Associate Professor, Ph.D., Southern Illinois University, 1964; 1961.
 TALLEY, C. HORTON, Professor, *Emeritus*, Ph.D., State University of Iowa, 1936; 1948.
 WILEY, RAYMOND D., Assistant Professor, M.S., Southern Illinois University, 1965; 1965.

Speech Pathology and Audiology (College of Communications and Fine Arts)

ANDERSON, JOHN O., Professor, Ph.D., Ohio State University, 1950; 1950.
 ATKINSON, CHESTER J., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1950; 1955.
 BLACHE, STEPHEN E., Assistant Professor, Ph.D., Ohio University, 1970; 1971.
 BRACKETT, ISAAC P., Professor, Ph.D., Northwestern University, 1947; 1951.
 BRUTTON, GENE J., Professor, Ph.D., University of Illinois, 1957; 1957.
 COPELAND, ALFRED B., Associate Professor, Ph.D., University of Washington, 1964; 1964.
 FRALISH, KATHLEEN B., Instructor, M.S., University of Wisconsin, Madison, 1968; 1972.
 FRANZEN, RICHARD L., Assistant Professor, Ph.D., University of Iowa, 1970; 1974.
 GARBUTT, CAMERON W., Associate Professor, *Emeritus*, Ph.D., Louisiana State University, 1951; 1947.
 HOSHIKO, MICHAEL S., Professor, Ph.D., Purdue University, 1957; 1957.
 KOEPP-BAKER, HERBERT, Professor, *Emeritus*, Ph.D., University of Iowa, 1938; 1961.
 MONCUR, JOHN P., Professor and *Chairman*, Ph.D., Stanford University, 1950; 1972.
 PACE, SUE A., Professor, Ph.D., Northwestern University, 1966; 1965.

Technology (School of Engineering and Technology)

ANDREWS, PAUL E., Lecturer, M.S., Memphis State University, 1972; 1971.
 BARBAY, JOSEPH E., JR., Assistant Professor, Ph.D., University of Missouri, Columbia, 1971; 1970.
 BESTERFIELD, DALE H., Assistant Professor, Ph.D., Southern Illinois University, 1971; 1962.
 CHEN, HAN LIN, Instructor, M.A., Southern Illinois University, 1958; 1969.
 DUNNING, E. LEON, Professor and *Chairman*, Ph.D., University of Houston, 1967; 1957.
 FERKETICH, ROBERT R., Instructor, M.S., Southern Illinois University, 1962; 1971.
 FERRELL, C. STUART, Assistant Professor, Ph.D., University of Missouri, Rolla, 1971; 1970.
 HART, WILLARD C., Instructor, B.S., University of Illinois, 1939; 1950.
 JOHNSON, MARVIN E., Professor, Ed.D., University of Missouri, Columbia, 1959; 1948.
 KLOPP, MARK E., Associate Professor, M.S.Ed., Pennsylvania State University, 1954; 1956.
 MOELLER, C. MERRILL, Associate Professor, M.S.C.E., Kansas State University, 1951; 1956.
 OTT, CARLYLE G., Assistant Professor, M.S.Ed., Southern Illinois University, 1951; 1966.
 ROGERS, C. LEE, Lecturer, M.S., Southern Illinois University, 1969; 1967.
 SONNER, JAN R., Assistant Professor, Ph.D., Southern Illinois University, 1972; 1965.

Theater (College of Communications and Fine Arts)

CANNON, JOHN, Assistant Professor, M.F.A., Carnegie-Mellon University, 1968; 1973.
 GORDON, LONNY JOSEPH, Assistant Professor, M.F.A., University of Wisconsin, 1967; 1972.
 McLEOD, ARCHIBALD, Professor and *Chairman*, Ph.D., Cornell University, 1943; 1947.
 MARSHALL, HERBERT, Adjunct Professor, 1966.
 MOE, CHRISTIAN H., Professor, Ph.D., Cornell University, 1958; 1958.
 PAYNE, DARWIN, Associate Professor, M.F.A., Southern Illinois University, 1955; 1963.
 STEWART-HARRISON, EELIN, Associate Professor, Ph.D., Louisiana State University, 1968; 1961.
 STRAUMANIS, ALFREDS, Assistant Professor, Ph.D., Carnegie-Mellon University, 1966; 1973.
 WAGNER, PHYLLIS, Assistant Professor, Ph.D., University of Denver, 1972; 1973.
 ZELLAN, LES, Assistant Professor, M.F.A., Carnegie-Mellon University, 1972; 1974.

Thermal and Environmental Engineering (School of Engineering and Technology)

CHEN, JUH W., Professor and *Chairman*, Ph.D., University of Illinois, 1959; 1965.
 COOK, ECHOL E., Assistant Professor, Ph.D., Oklahoma State University, 1970; 1971.
 HESKETH, HOWARD E., Associate Professor, Ph.D., Pennsylvania State University, 1968; 1968.
 JEFFERSON, THOMAS B., Professor, Ph.D., Purdue University, 1955; 1969.
 KENT, ALBERT C., Associate Professor, Ph.D., Kansas State University, 1968; 1966.
 MUCHMORE, CHARLES B., Associate Professor, Ph.D., Southern Illinois University, 1970; 1966.
 O'BRIEN, WILLIAM S., Assistant Professor, Ph.D., West Virginia University, 1972; 1973.
 PETRIE, THOMAS W., Assistant Professor, Ph.D., University of Minnesota, 1969; 1972.
 ROSEN, HOWARD N., Adjunct Assistant Professor, Northwestern University, 1969; 1971.
 STOEVEER, HERMAN J., Professor, *Emeritus*, University of Illinois, 1934; 1960.

Zoology (College of Science)

ANTHONEY, TERENCE R., Assistant Professor, M.D., University of Chicago, 1968; 1971.
 BEATTY, JOSEPH A., Associate Professor, Ph.D., Harvard University, 1969; 1965.
 BLACKWELDER, RICHARD E., Professor, Ph.D., Stanford University, 1934; 1958.
 BRANDON, RONALD A., Professor, Ph.D., University of Illinois, 1962; 1963.
 DYER, WILLIAM G., Associate Professor, Ph.D., Colorado State University, 1965; 1969.
 ENGLERT, DUWAYNE C., Associate Professor, Ph.D., Purdue University, 1964; 1963.
 FISHER, HARVEY I., Professor, Ph.D., University of California at Berkeley, 1942; 1955.
 GALBREATH, EDWIN C., Professor, Ph.D., University of Kansas, 1951; 1957.
 GAROIAN, GEORGE, Associate Professor, Ph.D., University of Illinois, 1956; 1956.
 GEORGE, WILLIAM G., Associate Professor, Ph.D., University of Arizona, 1961; 1964.
 GERSBACHER, WILLARD, Professor, *Emeritus*, Ph.D., University of Illinois, 1932; 1936.
 HAAS, HERMANN J., Professor, Doctor, University of Göttingen, Germany, 1954; 1963.
 HARDIN, JAMES W., Assistant Professor, Ph.D., Southern Illinois University, 1974; 1974.
 HEIDINGER, ROY C., Assistant Professor, Ph.D., Southern Illinois University, 1970; 1970.
 KLIMSTRA, WILLARD D., Professor, Ph.D., Iowa State University, 1949; 1949.
 LEFEBVRE, EUGENE A., Associate Professor, Ph.D., University of Minnesota, 1962; 1966.
 LEWIS, WILLIAM M., Professor and *Chairman*, Ph.D., Iowa State University, 1949; 1949.
 MARTAN, JAN, Professor, Ph.D., University of Oregon, 1963; 1964.
 MCPHERSON, JOHN E., JR., Associate Professor, Ph.D., Michigan State University, 1968; 1969.
 PAPARO, ANTHONY A., Assistant Professor, Ph.D., Fordham University, 1969; 1973.
 PETERSEN, BRUCE W., Assistant Professor, Ph.D., University of Colorado, 1968; 1968.
 SHEPHERD, BENJAMIN A., Associate Professor, Ph.D., Kansas State University, 1970; 1969.
 STAHL, JOHN B., Associate Professor, Ph.D., Indiana University, 1958; 1966.

STAINS, HOWARD J., Professor, Ph.D., University of Kansas, 1955; 1955.
STEIN, HILDA, Associate Professor, *Emerita*, M.S., University of Illinois, 1929; 1925.
WARING, GEORGE H., Associate Professor, Ph.D., Colorado State University, 1966;
1966.

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OBJECTIVES OF
SOUTHERN ILLINOIS UNIVERSITY

TO EXALT BEAUTY

*In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;*

TO ADVANCE LEARNING

*In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;*

TO FORWARD IDEAS AND IDEALS

*In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;*

TO BECOME A CENTER OF ORDER AND LIGHT

*That knowledge may lead
to understanding
And understanding
to wisdom.*



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